

American Artisan

Founded 1888

The Warm Air Heating and Sheet Metal Journal

Vol. 96, No. 24

CHICAGO, DECEMBER 15, 1928

\$2.00 Per Year

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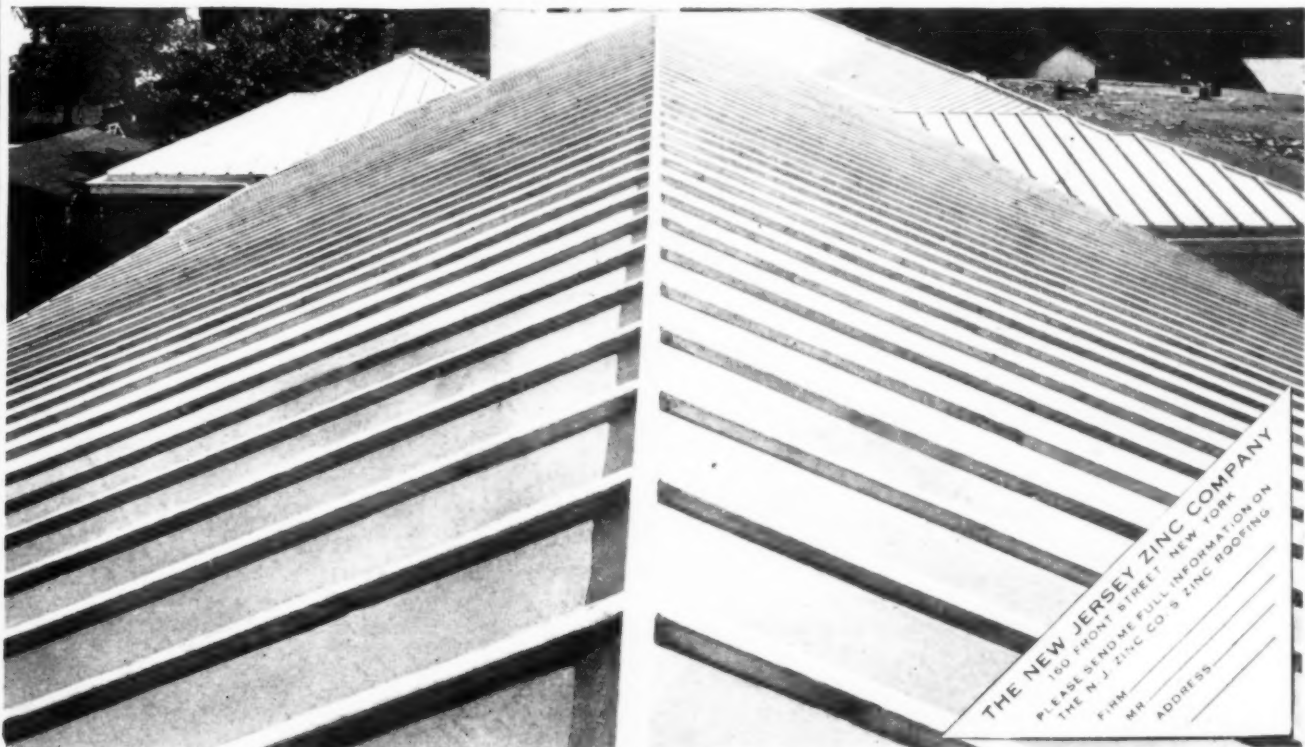
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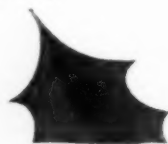
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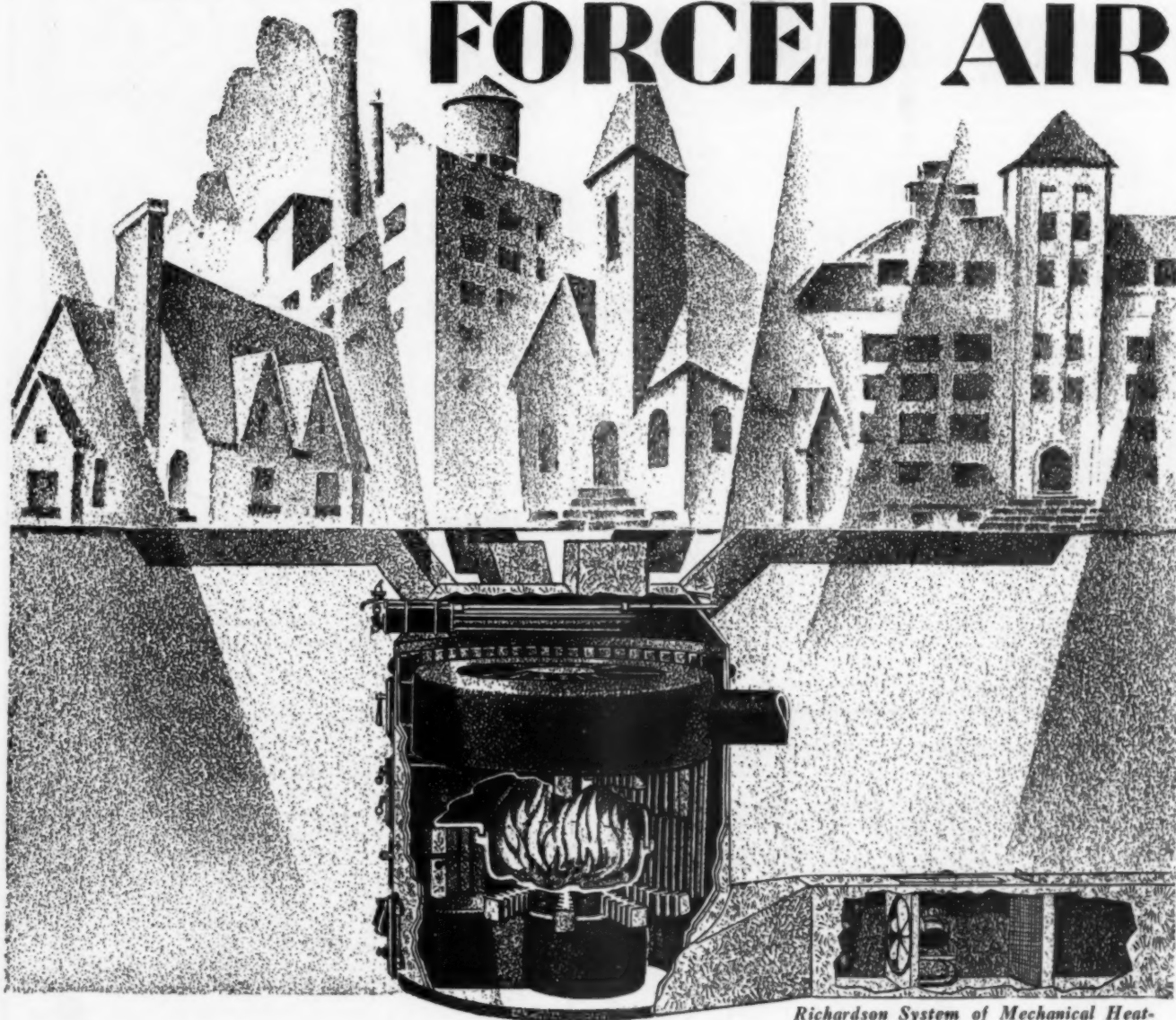


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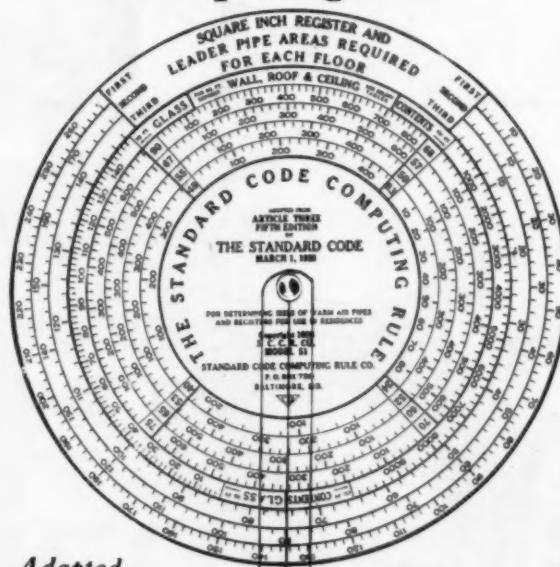


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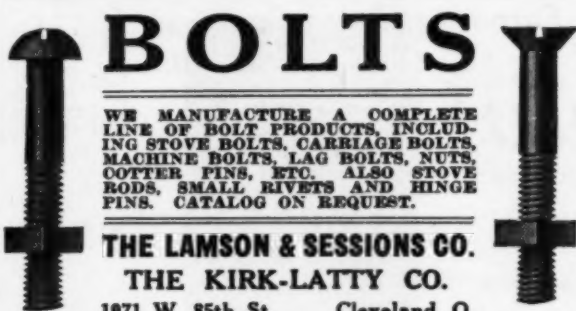
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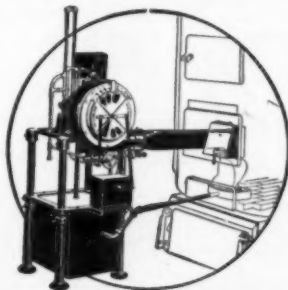
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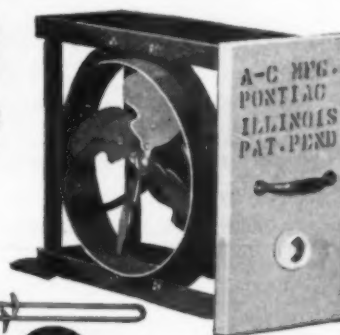
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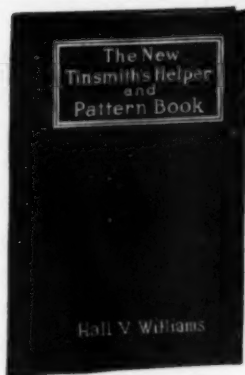
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American Artisan

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Table of Contents

	Page		Page
Ventilator Business Growing Rapidly, by Professor A. J. Mack.....	112 to 115	Random Notes and Sketches, by Sidney Arnold	117
Building Good Reputation Best Business Getting, Milwaukee Sheet Metal Man Finds, by William Scollard	103	Here's One Good Way to Insure Advertising Matter Being Preserved.....	118
Range Hoods Must Be Made to Suit Each Special Occasion, by O. W. Kothe.....	104	Who's Who, Where!.....	120
Today Is the Day of Research, Performance Curves and Charts.....	106	Markets	121

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Whenever I have found out that I have blundered, or that my work has been imperfect, and when I have been contemptuously criticized, and even when I have been so overpraised that I have been mortified, it has been my greatest comfort to say over and over to myself that, "I have worked as hard as I could, and no one can do more than this."

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American Artisan

The Warm Air Heating and Sheet Metal Journal



Vol. 96

CHICAGO, DECEMBER 15, 1928

No. 24

Building Good Reputation **BEST BUSINESS GETTER** Milwaukee Sheet Metal Men Find

*Suggesting Uses for Sheet Metal in Home
Relieves Householder and Brings Business*

By WILLIAM SCOLLARD

EVERY job that the William Pietsch Co., sheet metal workers, does is personally supervised by William Pietsch himself, which is one of the reasons why the firm has attained a very enviable reputation among contractors and home owners in Milwaukee.

The firm has been in business for seven years and has grown so steadily that Mr. Pietsch is contemplating the erection of new quarters during the next year, in order to make his shop facilities more adequate. Right now the firm has twelve men working and they are all kept busy.

Careful Planning of Work Necessary

"The principle upon which we have attained our success," declared Mr. Pietsch, "is carefully planned work. By that I mean that every job which is done in this shop is done by careful workmen. If we

have to go to a home to do a job, the same careful work is done. Whenever we have furnaces to install, etc., we get together and talk over the job right on the premises."

This sort of cooperation between Mr. Pietsch and his employes has resulted in a very high caliber of

work, and contractors and home owners all over Milwaukee have come to know the firm as one which turns out grade 1 work. This sort of reputation is accumulative and steadily results in more business.

"Instead of working out a lot of complicated merchandising ideas

which might or might not work, we concentrated instead on quality work and intelligent application on the job before us," stated Mr. Pietsch. "I actually believe that this policy has stood us in good stead, because we have never lost a customer because of defective work."

Furnace Installation Business Done With Utmost Care

"Heating is a very important problem in modern life and people devote more attention to their heating problems than they ever did before. When they know that a de-

(Continued on
Page 120)



Store of Butters-Fetting Company, Milwaukee

Range Hoods Must Be Made to Suit Each Special Occasion

Can Be Made a Thing of Beauty As Well As Utility If Care Is Used

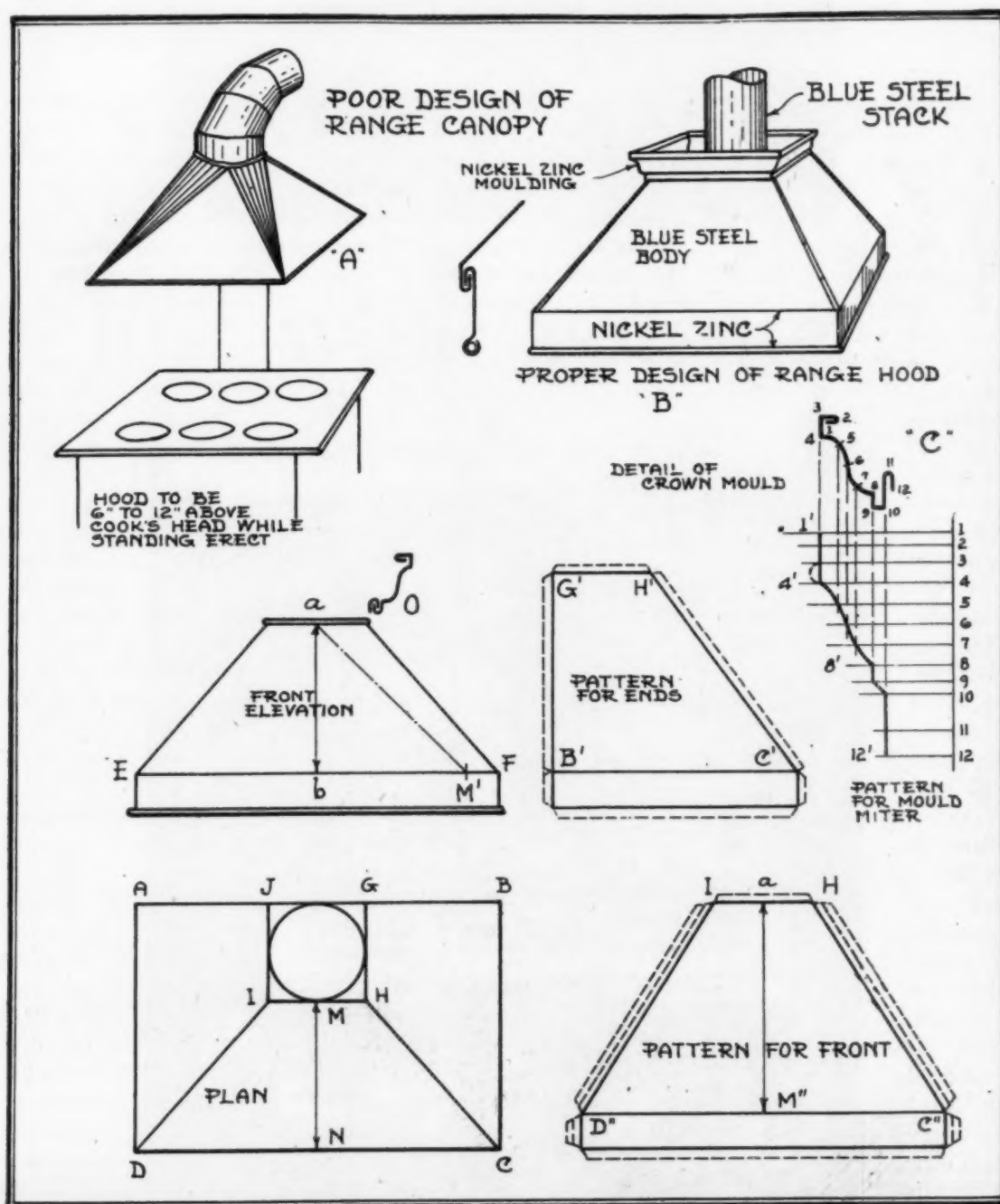
By O. W. KOTHE, St. Louis Technical Institute

THE matter of making kitchen range canopies, as well as canopies used in manufacturing plants is an interesting line of work. On many of these jobs a plain hood of

galvanized iron is suitable, on others it pays to be more particular.

For instance most inexperienced mechanics in this line of work will immediately suggest a common

square to round hood as at "A" in our drawing. It is seldom that this type of hood looks well. For small hoods, with an eye to good looks a right respectable hood can be de-



Details for Range Hood

signed on this order. Here the height is generally made shallow, and not so high as sketch "A" indicates.

Some folks will make the height to suit the width of the sheet of metal—something akin to a smoke stack extension.

A much better design and proportion for most canopy work is shown at "B." These can be made out of such metals as blue steel, galvanized iron, zinc or nickel zinc. The galvanized iron looks well while it is new, and after a short while the galvanizing is rubbed off or it is not kept clean, and a rather unsightly appearance is left. With blue steel, the metal is liable to rust if not looked after thoroughly in all places. Zinc and nickel zinc have the advantage of a uniform color throughout, but if not kept clean will also not show up any too well. But this latter is rather a matter of the management not keeping the metal clean.

In many jobs where ornamental design and color is desired; such canopies can be made with a mixture of blue steel and nickel zinc. The lower band and the crown mould can be made of nickel zinc, while the body of hood is made of blue steel. The combination will look well if proportioned correctly.

In laying out a hood as at "B" a front elevation is first drawn, making the length E-F to suit, and the height a-b also as becomes the job. Where low ceilings are met with, the hood must necessarily be made shallow, since from six to twelve inches should be provided for head room for the chef. For gravity work the size of the discharge pipe should be about $1/15$ the area of the base of hood. Thus, if we have a hood of say 30 x 60 inches, we would have an area of 1,800 square inches in the base. Now

$$1,800$$

$$\frac{\quad}{15} = 120 \text{ square inches}$$

$$15$$

that the discharge pipe must contain. Using a circumference and area table, we see this is equal to a $12\frac{1}{2}$ -inch diameter of pipe.

We next draw the plan, placing

the discharge outlet where desired and to our measurements. In this case we have it on center as G-H-I-J. To save drawing an end elevation, we pick the flare M-N of plan and set as b-M' of elevation, and a-M' is the true length of front.

To lay out the pattern for ends, draw a right angle G'-B'-C', making G'-B' equal to O-F of elevation, and B'-C' equal to B-C of plan. The top G'-H' is also taken from plan G-H, and this enables us drawing the slant hip line C'-H'. To this the lower apron is added, and also the several lap edges shown dotted.

The pattern for front is set out by drawing a line D''-C'' equal to D-C of plan. From center M'' erect a perpendicular line as M''-a, equal to a-M' of elevation, and then add the width of top as I'-H'' taken from plan. This enables drawing the hip lines, after which the apron and lap edges are allowed.

As the back is straight, the front elevation will represent the pattern for back, only edges must be allowed extra. A quarter or three eighth inch rod is inclosed along the bottom edge as a stiffener and where nickel zinc is used the lap is bent reverse to hold the polished side outside over the wire edge, as our detail above "B" shows. The allowance for wire edge is equal to $2\frac{1}{2}$ times the diameter of rod.

Where a crown mould is added to the top of hood we show, care must be taken to properly proportion this mould. Its size, as height, projection, and number of members is naturally governed by the size of hood. But any well proportioned Ogee mould always looks well, providing the designer knows how to design such a mould. There are many a thousand mechanic who thinks he knows, but invariably the Ogee is too harsh, too great in projection and too squatty; or exactly the reverse of these, where not enough projection is allowed, and too high with ill designed Ogee. It is only a considerable amount of architectural drafting and study of cornice work that will straighten this error out.

After the detail is drawn as at

"C," divide all curved members in equal spaces and number all points and bends as from 1 to 12 in this case. Now pick each of these spaces separately as 1-2; 2-3; 3-4, etc., to 12 with dividers and set on a straight line below detail as on 1-12. From here square out stretchout lines, and then from each point in detail drop lines to cross similar numbered lines in stretchout thus establishing points 1'-2'-3'-4', etc., and gives the miter cut. This pattern is used to mark off the miters on the metal strips for crown mould.

No edges should be allowed, but only on the top fillet, the others are butted and soldered, and if necessary a zinc reinforcement strip is soldered inside.

In assembling such work, the workman must observe not to leave hammer marks or to stretch the metal in any place thus causing buckles. The hammer or mallet should be applied with knowledge on what each blow does to the metal. Any farmer can hammer right and left as when using a post maul; but only carefully disciplined mechanics can handle a hammer or mallet and do with it what they want to without bruising the metal. This is especially so with zinc and copper.

Value of Insulation Is Well Established

The value of insulation is a proved fact. A great many experiments have been run by testing laboratories to determine the merits of various materials used in this way. You can obtain the results of these from the United States Bureau of Standards at Washington, D. C. Many state university testing laboratories have data to distribute on this subject.

Insulating manufacturers report an enormous distribution of their products in the zone south of the great lakes, showing that this material is being used even where the winters are not generally severe. Remember that insulated walls are also a protection from summer heat. Do not waste your money by insulating walls and leaving the second-story ceiling uninsulated.

Today Is the Day of Research, Performance Curves and Charts

Individual Companies Making Thorough Test of Products to Determine Merit

THE LETTER which follows is that of William E. Skinner of the Metaphram department of the

importance to the industry, but you also realize that there is a considerable amount of information on re-

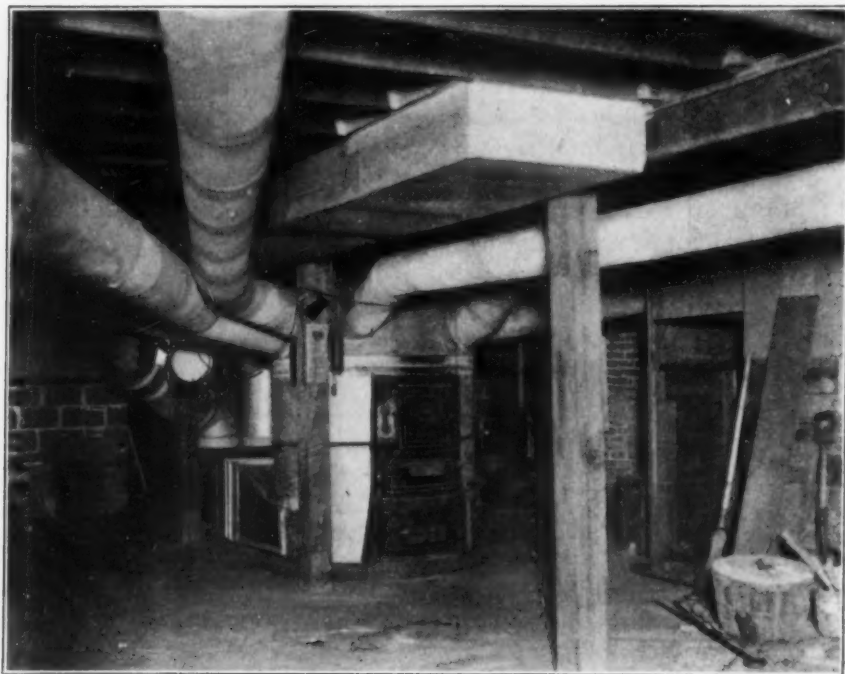
finements on which there is no reliable authority at this time for either the manufacturers or the trade.

"We take pleasure in informing you that this company has been and is doing some comparative research on which we are comparing the plant operation under gravity and with fans, and with and without filters. We are also doing automatic fan control work.

"This work is being done in a frame house at Desplaines, Illinois, and the present installation consists of a Round Oak moist air furnace, an Autovent fan, National Air Filter Company's air filters, and a fan control switch from the Absolute Con-Tac-Tor Corporation.

"We recently held open house and at that time invited as many of the trade paper editors and furnace company officials and engineers as we were able to reach.

"For the present we are not giving any technical data but will make



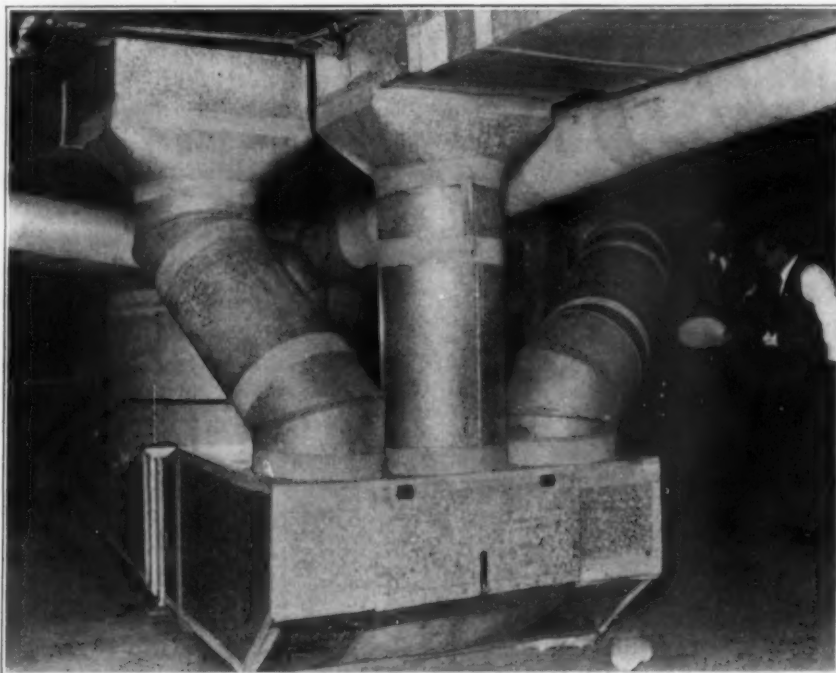
Basement of Home in Which Furnace Installation Upon Which the Tests Mr. Skinner Describes Was Placed

National Regulator Company, 2301 Knox Avenue, Chicago, the occasion being the conducting of experiments on some of the company products.

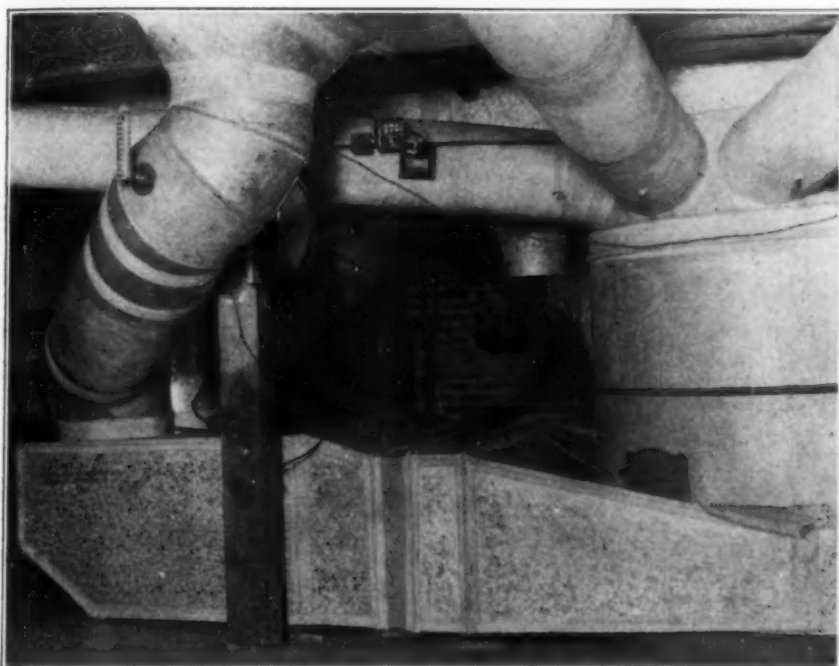
Although the company is not yet ready to give out any details regarding the tests that were made, the accompanying illustrations and Mr. Skinner's letter will give the reader some idea of how they have gone about making the tests. Then later on when they have their information compiled they will make public announcement of their findings.

The installation is made in an ordinary frame structure and consists of a warm air furnace, a fan, an air filter and a heat regulator.

"You are fully appreciative of the research work being done by the National Warm Air Heating Association at Urbana, and realize its



An Excellent View of the Cold Air Shoe Into Which Three Cold Airs Are Emptying



Side View of the Cold Air Shoe Showing the Apparatus Used in the Test

the following general observations. The plant apparently works equally well with the filters in or out of the circuit and either on gravity or fan operation. With the fan on we were particularly pleased to note the small difference in temperature between the breathing line and the floor, and observations at the same time showed ceiling temperatures lower than usual under gravity. While we have considerable of this data and are not releasing it at this time, we hope to have some of it available soon."

A Handbook of Domestic Oil Burning Now Available

Gone are the days when the type of heating plant and the square feet of radiation necessary to heat a building can be determined by a casual "once over" by the local plumber.

The modern heating engineer who attempts to solve these problems must have a thorough knowledge of the effect of the different construction materials upon the heating requirements of a building—whether it is brick, brick veneer on hollow tile, hollow walls with stucco finish, limestone or sandstone, cut stone veneer on concrete

walls, wood siding or clapboard walls, or wood shingle walls. He knows, too, the significance of the number of windows in a room, the presence of a fireplace, the location and kind of exposure, and such things as piazza roofs and fixed wood shafts. And when he collects all the data he puts it down on paper and, with the help of charts and tables and equations, he adds and subtracts and divides and finally reaches the exact amount of heat necessary for modern comfort.

These are some of the things explained authoritatively in the new and revised edition of "Handbook of Domestic Oil Heating," just published by the American Oil Burner Association, New York. In this new edition, the first revision of the Association's Handbook in two years, a definite and intelligent effort has been made to eliminate all obsolete material and include quantities of new data for which those at work in this fast-growing industry have felt a genuine need.

At the outset, Henry F. Tapp, the editor, has carefully defined and explained the words, phrases and terms in heating and ventilating practice, in oil technology and in oil burning, so that even those most unfamiliar with these subjects will

be able to read the book with understanding. This patient clarity of exposition is an outstanding feature of the whole book. Its 383 pages contain 55 tables and 153 illustrations and charts. Whether it is discussing radio "interference" and oil burner operation or describing and analyzing the different types of oil burners and controls, there are always near at hand a sufficient number of pictures and tables and charts to make the explanation quickly intelligible.

There is important information for the guidance of installation and service men, with suggestions for tests. There is factual data covering the question of comparative costs, with tables and other methods for comparing the cost of oil with other commonly used fuels.

The Handbook is offered in a 4 by 7-inch flexible binding, and the text is printed on India paper. These considerations of the publishers permit it to be carried as a convenient and ready reference volume. Its price is \$3 and it can be obtained by addressing the American Oil Burner Association, Inc., 342 Madison Avenue, New York, N. Y.

Greater Chicago Warm Air Association Holds "Peppy" Meeting

A meeting of the Greater Chicago Warm Air Heating Association was held in the dining room of the Cook County Democracy Club Boat docked at the foot of Wells Street and Wacker Drive, Monday evening, December 10. A representative gathering assembled, including President L. M. Burt and Secretary Fred Goodall, all of the old standbys and several whose faces have been absent from the group for a long time.

A round table discussion was had on several matters of vital importance to the individual members and to the association in general. Those men who are members of the association, but who deemed it not worth their while to come to this meeting were the losers this trip, because in addition to getting a very fine dinner, those who attended en-

tered into discussion of matters that are closest to the hearts of every true warm air furnace installer in the city of Chicago. And each man left the meeting with a better understanding of what the whole thing is all about than he has had for a long time. He left with a renewed interest and a feeling that by closer cooperation among the fellow furnace installers he can get farther and do more good than he could ever possibly hope to do single handed.

With a renewed spirit of this character guiding the actions of members of an association numbers mean nothing at all. Two men can do more than one. Three men can do more than two and so on. It's the fact that they are willing to pull together; that they are willing to forget petty jealousies and selfish interests for a far greater goal—the betterment of the industry as a whole of which they are a part. That spirit cannot be beaten, and its swelling up in the breasts of those who were present at the meeting of the Greater Chicago Warm Air Heating Association on Monday evening shows that those present are men at heart.

Further meetings of the association have been postponed until the fourth Monday in January on account of the next regular meeting falling on Xmas eve. But at the next meeting something very definite in the way of development can be looked for.

Sall Mountain Company, Chicago, Now Producing Asbestos Paper for Stripping in 3-inch Rolls

One of the most important jobs confronting the furnace installer is the elimination of dust leakages into the air circulating system of the warm air furnace. This is often done by either wrapping the entire piping, and sealing up the openings where the pipes go through the floor, or by stripping the joints.

To eliminate the usual difficulties in this work the Sall Mountain Company, Chicago, Illinois, has entered the production of asbestos paper for stripping in convenient

3-inch rolls. This product is known as Sal-Mo asbestos.

G. V. Wilson, Vice President of the company, recently pointed out that many furnace contractors are still favoring the complete covering



Sal-Mo Product

of the furnace casing and pipes, as well as the joints, because of the better appearing, cleaner looking finished job. For convenience of dealers preferring to cover pipes and casings, as well as joints, the Sall Mountain Company has seen fit



Showing How Product Is Put Up for Buyer's Convenience

to devise a means whereby the difficulties encountered in covering an elbow can be done away with and thus cut down the time needed for application.

For further information concerning this product write to the Sall Mountain Company, Chicago, Illinois.

Illinois Sheet Metal Contractors Hold Directors' Meeting

A meeting of the Board of Directors of the Sheet Metal Contractors' Association of Illinois was held in Peoria, Illinois, recently, called to order by President R. J. Jobst at which the following named men were present:

R. J. Jobst, Peoria, President; J. J. Walters, Ottawa, Vice-President; Ralph W. Poe, Canton, Secretary; G. J. George, Springfield, Director; Peter Beigler, Chicago, and Chas. Radtke, Peru, appointed Directors.

Motion by G. J. George, seconded by J. J. Walters that Mr. Peter Beigler be appointed to fill vacancy on board of directors caused by death of Chas. N. Louis until next annual election. Carried.

Motion by J. J. Walters, seconded by G. J. George that Mr. Chas. Radtke be appointed to fill vacancy on board caused by death of Wm. Schmoeger until next annual election. Carried.

Having decided to hold two district meetings, the board accepted an invitation extended from Peru and LaSalle to hold the northern district meeting at Peru, Illinois, the third week in January, 1929, sometime between the 13th and 19th.

Springfield extended an invitation for the south and central district meeting to be held in that city the fourth week in January, 1929, sometime between the 21st and 26th.

The exact dates of the above meetings are to be set later.

The membership will be notified at which place their attendance will be expected.

Peoria was selected as the convention city for 1929 at the last annual convention in Rock Island; and the Jefferson Hotel was designated as the convention hotel. The question of extending the convention to cover three-day period was discussed.

On motion by Peter Beigler, seconded by G. J. George to hold a three-day convention.

April 9, 10 and 11, 1929, were selected as the convention dates.

The matter of what would be

most interesting to the membership as to convention program was discussed at length and it was decided to request all of the members who would do so to advise the president, R. J. Jobst, or the Secretary, Ralph W. Poe, in what they were most interested.

The secretary was instructed to send letters of condolence to the families of beloved directors now deceased, Wm. Schmoeger and Chas. N. Louis, and also Harry Dettmers, one of the most active members.

The secretary was also instructed to notify the National Secretary and the trade papers of the district meeting dates and the dates of the state convention.

The secretary was also instructed to furnish each of the state officers with a list of the membership in good standing.

After the meeting the officers present were entertained by the Peoria Association and enjoyed a wonderful repast served at "Schaefer's on the Hill" and as usual everybody ate too-o-o much with the exception of "Pete" Beigler.

The following resolution was passed by the Peoria Local on the death of Charles N. Louis:

"Whereas, the grim messenger, death, has entered our circle and taken from our midst one of our most prominent, earnest and faithful workers, Charles N. Louis;

"Resolved, that the members of the Peoria Sheet Metal Contractors' Association feel that in this visitation they have been bereft of a wise counsellor, a valued member, an honest business man, and one who has endeared himself to all with whom he came in contact; be it further

"Resolved, that the foregoing resolutions be spread in full on our records and a copy be conveyed to his bereaved family.

"In testimony of our heartfelt sympathy in the late bereavement, we assure them that we share in their grief and will hold in kind remembrance our departed associate.

"Unanimously adopted this 26th day of November, 1928."

Inland Steel Company Forms New Corporation for Limestone Production

The Inland Steel Company has organized a new corporation, for the production of chemical and metallurgical limestone, to be known as Inland Lime & Stone Company. The project will be located in the eastern end of the northern peninsula of Michigan, about 25 miles east of the City of Manistique.

The negotiations which have led up to this transaction have been carried on for some time with Manistique Lime & Stone Company, whose business will be taken over and continued, and whose stockholders will retain an interest in the new company.

During the past year a campaign of exploration by diamond drilling has been conducted on the lands owned or held under option by the Manistique company and George J. Nicholson personally.

In developing the project a large quarry will be opened, a railroad will be constructed to Lake Michigan, and a crushing and screening plant with suitable harbor and dock facilities will be constructed in the vicinity of Seul Choix Point, making the limestone available for transportation in lake vessels. Stone will be produced not only for use in the steel industry, but also for chemical purposes, such as the paper industry, in which the Manistique company has already built up a substantial business. That phase of the project will continue to be managed by George J. Nicholson, and his assistants, Gordon Hughes and Walter Moon, who are responsible for the recent growth and expansion of the Manistique company.

The opening of the new quarry and the construction and operation of the new plant will be in charge of A. J. Cayia, who for the past four years has been Superintendent of the Wakefield Mine for The M. A. Hanna Company on the Gogebic Range in Michigan.

The directors of Inland Lime & Stone Company will be P. D. Block, L. E. Block, David P. Thompson,

Clarence B. Randall, George J. Nicholson, Gordon Hughes and I. N. Bushong.

The officers will be: President, David P. Thompson; Assistant to the president, Clarence B. Randall; Vice President, George J. Nicholson; Secretary-Treasurer, W. D. Truesdale.

It is expected that the new plant will be put into operation during the latter part of the season of 1930.

Wisconsin Sheet Metal Contractors Will Hold Convention February 4 and 5

A meeting of the Master Sheet Metal Contractors' Association of Wisconsin was held in Milwaukee last week, called to order with President Tolg in the chair and the following members present:

C. C. Tolg, Chas. Pansch, O. Geussenhainer, Louis Reinke, Paul Biersach, W. Gehrke, R. Jeske, Walter Belau.

Discussion on the resignation of F. W. Diedrich & Company of Fond Du Lac and Ed. Schwantes of Beaver Dam, took place and secretary was instructed to write them in reference to paying their dues before they can be dropped from roll.

Motion was made and seconded that hall rent of Builders Exchange be paid for the year of 1928.

O. Geussenhainer gave a very interesting talk on general business with conditions at the present time—the method now in vogue of the chain stores proposition in many lines and how he thought that the association should use some of these methods in strengthening the organization.

The secretary was instructed to send out notices for meeting of convention committee at Paul Biersach's Rathskeller on December 15, 3 p. m. sharp—after this hour doors will be locked and no entrance granted so all should be on hand early.

Date of convention was set for February 4 and 5 and secretary was instructed to notify Mr. Greenwood and also write for hotel information.

American Foundry & Furnace, Bloomington, Has New Fan Called the Hustler

Most warm air furnace jobs, carefully designed according to the Standard Code, satisfactorily and successfully heat all rooms to which complete runs of pipe are made.



Showing Installation

But many jobs have one or two runs of pipe that are too long for gravity flow of air. The long run may go to a sun porch (a room where the family particularly delights to live in the winter time). Or the long run may be to a bathroom where quick heat and lots of it is imperative if the customer is to be pleased.

The salesman who is selling a fan for the furnace, may be selling one of two types. The first type is a fan that goes in the cold air, says the manufacturer. These fans will do everything planned for them, but they will force most of their air through the pipes that heat the best by gravity. The long run will get the least heat with the fan in the cold air. The second type of fan commonly used for furnaces is a disc fan that goes in the bonnet of the furnace distributing the heat to all pipes equally.

Now both of the above types while excellent for the purpose intended, fundamentally neglect the main point: The customer wants heat in the cold room. Nine times out of ten he is perfectly satisfied with the other rooms. What he wants is lots of heat where he wants it.

The American Heat Hustler is the answer to this problem, say the manufacturers.

1. It is a positive type blower built to draw warm air from the furnace and force it up the pipe.

2. It operates on a single pipe only.

3. It is controlled by a push-button switch (or by an inexpensive Automatic Thermostat) in the room to be heated.

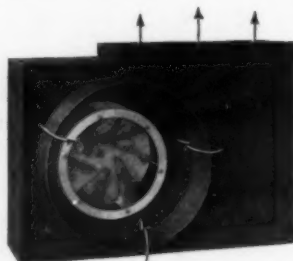
4. It delivers instantly at the press of a button twice the amount of air that flows through a well designed gravity pipe that is working at its best.

5. The electric motor is built so that it is wholly outside of the flow of warm air, does not get hot, is easily accessible for oiling.

The American Heat Hustler is built in three types. No. 501 takes the place of the boot connection between the round warm air pipe and a vertical stack.

No. 502 takes the place of an elbow and changes the flow of air at right angles, either right or left.

No. 503 is built for insertion anywhere in the round warm air leader pipe, in the basement.



Birdseye View

All of these models are quiet in operation.

It is made in two sizes, 500 size suitable for use on 8-inch, 9-inch or 10-inch pipes and 1200 size suitable for use on 12-inch and 14-inch pipes.

For further information and prices write American Foundry & Furnace Company, Bloomington, Illinois, attention "Heat Hustler Department."

Mrs. J. T. Groves in Serious Condition After Automobile Accident

Because of an accident which occurred at Decatur, Illinois, recently, Mrs. J. T. Groves, wife of one of the Midland Furnace Company salesmen, is now in a hospital at Decatur fighting for her life.

According to the reports of those who saw the accident, Mrs. Groves

was driving her new Chevrolet sedan, accompanied by a friend, Mrs. A. Doolen, when they failed to see the approaching north-bound Pennsylvania railroad train. They drove directly onto the track in front of the train and their car was demolished. Mrs. Doolen died without regaining consciousness, and Mrs. Groves lay in the hospital with her life in doubt for a long time before the fact was definitely established that she would live.

Mr. Groves was out covering his territory and was unable to be reached until he arrived home, when he was informed of the terrible accident which had befallen his wife. The sympathy of the entire warm air heating trade goes out to Mr. Groves in his time of terrible shock and trouble, with every hope that Mrs. Groves may recover from the terrible experience she has been through.

Brass Merger Includes Six Large Companies

Directors of the Rome Brass & Copper Company have approved a plan to merge with six other companies into the General Brass Corporation.

The companies included are the Taunton & New Bedford Copper Company, Baltimore Sheet Mill of General Cable Company, Rome Manufacturing Company, Michigan Brass & Copper Company of Detroit, Dallas Brass & Copper Company of Chicago, and Higgins Brass & Manufacturing Company of Detroit.

Too Hot for Them in Old Location

Compelled to move to another address because of a fire which had completely destroyed the old store, a merchant in Philadelphia, before he left, posted up a sign:

"It was too hot for us here. We had more heat than we needed.

So we have moved to (giving street address).

Where you will find us
Cool and ready for business."

The New Superb FAULTLESS FURNACE



BUILT TO GIVE THE BEST
DEMANDED IN A—

STRICTLY HIGH CLASS FURNACE

Jobbers and Dealers will find it advantageous to obtain full information.

The GRAFF FURNACE CO.
116-118 Wooster Street
NEW YORK

Say you saw it in AMERICAN ARTISAN—Thank you!



Photos Courtesy Royal Ventilator Co., Philadelphia

Plant of Philadelphia Electric Company, Delaware Station, Philadelphia, Upon Which 12 60-Inch Copper Royal Ventilators Have Been Installed on the Skylights Over the Turbines. Fourteen 42-Inch and 25 36-Inch Ventilators Have Been Installed on Other Parts of the Same Building

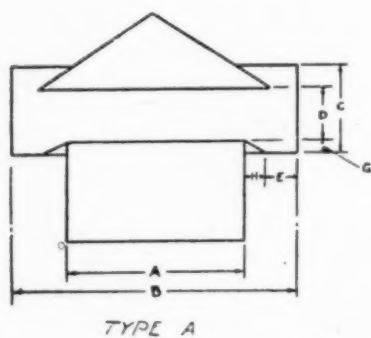
THIS is the seventh of the series of articles on industrial ventilation. This in reality is a continuation of the sixth article and will deal with the series of tests conducted on a number of ventilators in the Engineering Experiment Station of the Kansas State Agricultural College.

In order to derive very much from this article it will be necessary

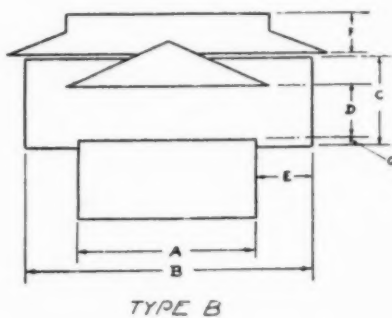
*Department of Mechanical Engineering, Kansas State Agricultural College, Manhattan, Kansas.

that the information given in the previous article be available for study. Figs. 7, 8, 9 and 10 represent line sketches of all the ventilators used in the tests. Tables V, VI, VII and VIII give the dimensions corresponding to letters in Figs. 7, 8, 9 and 10.

A careful study of the tables and figures will reveal some rather interesting things. Comparisons may reveal why some of the ventilators of a class are better than others.

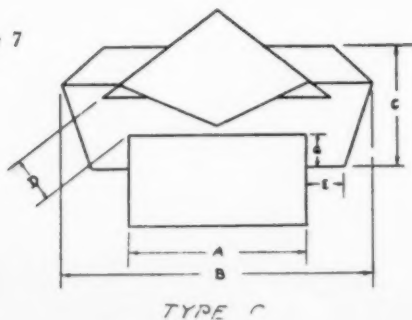


TYPE A



TYPE B

Figure 7



TYPE C

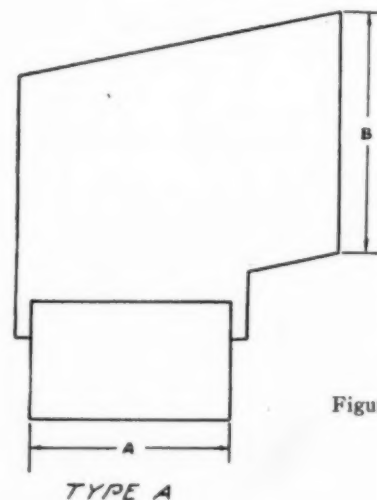
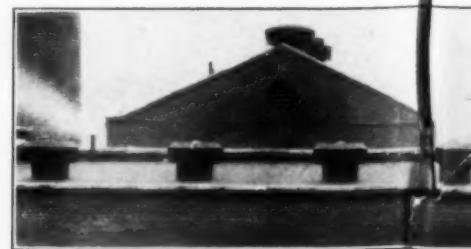


Figure 9

Interpretation of the Results

As judged from the results of these tests, it appears that a slight gain is made by those ventilators which utilize the wind to better advantage. In the order of their effectiveness are the rotary siphoning, the plain rotary, the stationary



Roof of West Jersey Homeopathic Hospital, Camden, N. J. Three 54-Inch Royal Ventilators Have Been Installed on the Roof of the Hospital House, and 12 36-Inch Ventilators Exhaust the

VENTILATORS IN SERVICE

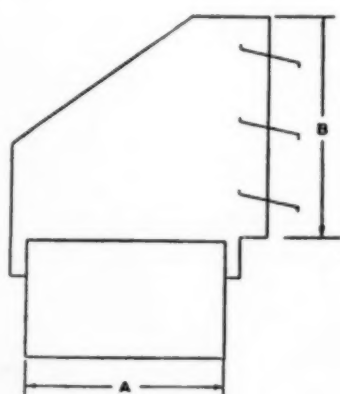
On All Types of Buildings Today

Business Growing Rapidly

By PROFESSOR A. J. MACK*

gation was made. Representative ventilators from the stationary siphoning group were selected and subjected to test. With the siphons

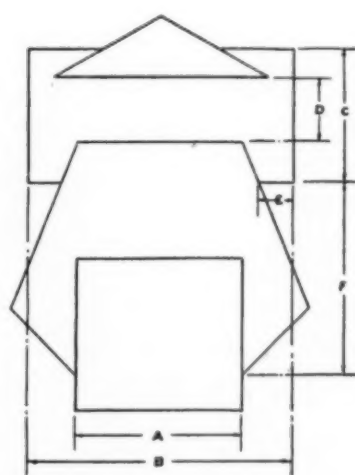
stopped, readings were taken of the wind velocity and that of the air induced through the ventilator. Three of the four ventilators gave better



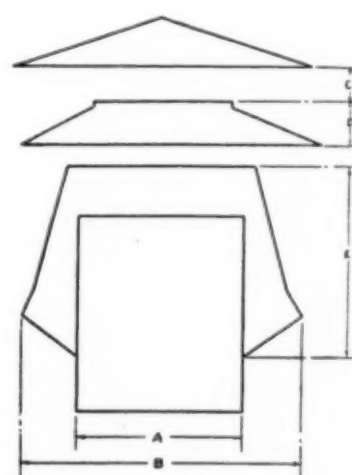
TYPE B

siphoning and the plain siphoning. The average effectiveness of the various groups of ventilators is shown graphically in Fig. 15, Article Six.

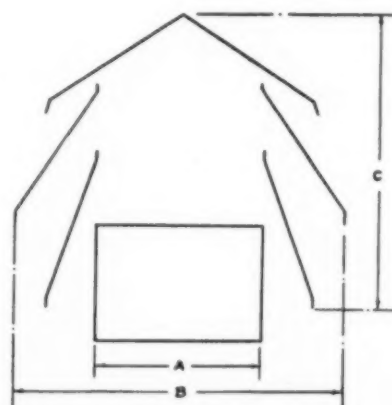
In order to determine what effect the siphons have upon the operation of the ventilator, a special investi-



TYPE A

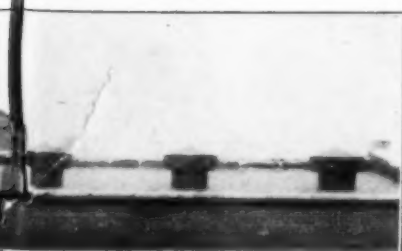


TYPE B



TYPE C

Figure 8



al, Camden, New Jersey, Upon Which
Been Installed to Ventilate the Boiler
ust the Air from the Laundry Building

TABLE V.—Dimensions of ventilators of plain stationary group.

VENTILATOR NUMBER.	Type.*	Dimensions in inches. (See figure 7.)								Top.	Remarks.
		A	B	C	D	E	F	G	H		
1A.....	B	10	17	5	3¼	3	2¼	½	.....	Conical.....	.....
2A.....	A	10	17	4½	3	1¼	.....	1¼	2	Spherical.....	.....
3A.....	A	10	16½	5½	3	3	.....	¾	½	Conical.....	.....
4A.....	A	10	17	4½	1¾	1¾	.....	1½	1½	Conical.....	.....
5A.....	C	10	16	6½	3	2	.....	2	.....	Conical.....	Inverted cone in top.
6A.....	A	10	18¼	6	4	2¼	.....	1¼	2	Conical.....	.....
7A.....	A	10	16	5	3½	2	.....	1	1	Conical.....	.....
8A.....	A	10	18½	5¾	3½	1¾	.....	3½	2½	Conical.....	.....
9A.....	A	10	17¼	5¼	3¼	1¼	.....	1¼	2	Spherical.....	.....

* Type refers to designation as used in figure 7.

results with all siphons open, one gave better results with all siphons closed. All four ventilators gave better results with siphons closed on the windward side, the siphons on the leeward side being open. These results indicate that the siphons assist slightly the effectiveness of the ventilator in some cases.

Tests were also made on two rotary siphoning ventilators to determine if siphons were of any advantage to them. In both cases slightly better results were obtained when the siphons were open than when blocked. The increased effectiveness of the rotary siphoning ventilators over the plain rotary, however,

lies chiefly in construction. In the main, they are so constructed, that the path of egress of air had no obstructions or sharp turns. The projected area was also enlarged, resulting in increased suction. These facts were also taken advantage of in the case of the most effective plain rotary ventilator.

It is a well known fact that abrupt turns decrease the velocity of moving air. This principle seems to play an important part in automatic ventilators. Ventilators whose inlet pipes projected above the bottom of the storm band ranked uniformly low in effectiveness. This is especially noticeable in the plain station-

ary group. In order to verify this conclusion tests were made on two different plain stationary ventilators, one being a commercial ventilator with a 4½-inch storm band, while the other was one especially constructed with a 22-inch storm band. The results of these tests are given in table 9.

The results as given in table 9 indicate that any unnecessary extension of the ventilator pipe above the bottom of the storm band reduces its effectiveness. A part of this loss is undoubtedly due to restriction of effective area, especially in the case of the ventilator with the 4½-inch storm band, table 9. The ventilator

TABLE VI.—Dimensions of stationary siphoning group.

VENTILATOR NUMBER.	Type.*	Dimensions in inches. (See figure 8.)								Number of siphons.	Remarks.
		A	B	C	D	E	F	G†			
1B.....	A	10	16	8	4	2	9	3	16	.....	.....
2B.....	A	10	18	6	2½	2½	11	8	5	1¼ skirt at bottom.	.....
3B.....	A	10	20	6½	1¾	2½	.....	8½	5	Spiral siphons, inverted cone in top.	.....
4B.....	C	10	20	15	.....	.....	.....	3	24	.....	.....
5B.....	B	10	18	0	.....	15	.....	3¼	4	Spiral siphons, inverted cone in top.	.....
6B.....	B	10	18	0	.....	15	.....	4	3¼	Spiral siphons.	.....
7B.....	A	10	17	7¾	3½	2¼	11	2½	14	.....	.....
8B.....	A	10	18	6½	3½	2½	11	4½	14	.....	.....
9B.....	B	10	16	1¾	2¼	11	.....	4½	4	Inverted cone in top.	.....
10B.....	B	10	18	1½	.....	11	.....	6	8	Inverted cone in top.	.....
11B.....	A	10	15	4½	1¼	1½	9	4½	4	Inverted cone in top.	.....

* Type refers to type designation as used in figure 8.

† Extension of ventilator pipe above bottom of skirt.

TABLE VII.—Dimensions of ventilators of plain rotary group.

VENTILATOR NUMBER.	Type.*	Dimensions in inches. (See figure 9.)			Number of louvres.	Shape of mouth.	Remarks.
		A	B	Size of mouth.			
1C.....	B	10	9¼	9¼x11.....	3	Rectangular.....	Restricted mouth
2C.....	A	10	12½	11¼x12½.....	0	Elliptical.....	—
3C.....	B	10	11	11x11.....	3	Rectangular.....	Restricted mouth.
4C.....	B	10	13	13x13.....	0	Rectangular.....	—
5C.....	B	10	11	11x11.....	3	Rectangular.....	Restricted mouth.
6C.....	C†	10	15	14x15.....	0	Elliptical.....	Opening around skirt.

* Type refers to type designation as used in figure 9.

† Type refers to type designation as used in figure 10 without siphons.

with the 4½-inch storm band is sold commercially with the ventilator pipe projecting 1¼ inches above the bottom of the storm band. Its effectiveness could be increased as much as 20 per cent by lowering this pipe.

A decrease in the effectiveness of

proportion to the obstruction such shutters produce.

The results of this investigation seem to indicate that the most effective action in inducing air through a ventilator is the vacuum produced in the wake of the wind. Those ventilators which showed

aid in the selection of an effective ventilator.

Tests of ventilators of different sizes and with different equipment would probably not exactly agree with the results given in these articles, but relatively they agree pretty well. To compare results with those

Table IX—Effect of Varying Extension of Ventilator Pipe Above the Bottom of Band
Velocity induced through ventilator pipe, in feet per minute

Velocity of wind in miles per hour.	22 in. storm band			4½ in. storm band	
	Extension of ventilator pipe above bottom of band. 1½ in.	4½ in.	8½ in.	Extension of ventilator pipe above bottom of band. 0 in.	1¼ in.
5	275	266	260	225	185
7	385	375	362	307	251
9	487	474	454	380	308

a ventilator is to be expected by the introduction of resistance. A slight decrease in efficiency is noted in those ventilators with an inverted cone or other peculiarly constructed top. Similarly those ventilators which are equipped with shutters have their effectiveness decreased in

marked effectiveness in these tests took advantage of this principle. These ventilators which presented a large obstruction to the wind, other factors being the same gave better results.

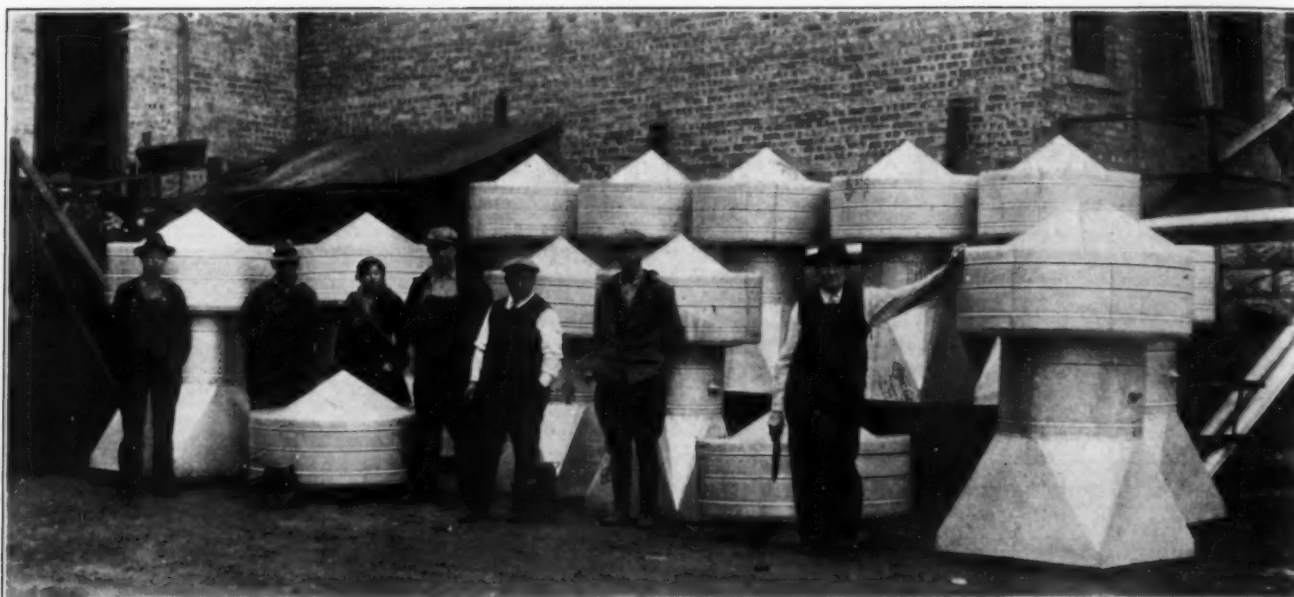
The information given in this and the sixth article should be of some

obtained by others the effectiveness of the open pipe could be taken as 1, and the effectiveness of the individual ventilators at the various wind velocities could be compared to that. In the case of those ventilators which are least effective the value is less than one and on the

TABLE VIII.

Ventilator number.	Type.*	Dimensions in inches. (See figure 10.)								Siphons.		Shape of mouth.	Remarks.
		A	B	C	D	E	F	G	H	No.	Diameter in inches.		
1D.....	A	10	19	10½	21	12	13½	13½	.....	.....	.....	Circular.....	—
2D.....	A	10	20	17	25	16	12½	10	8½	.....	.....	Circular.....	—
3D.....	A	10	11x16	11½x9½	19	17	10x12	10x9½	.....	.....	.....	Rectangular.....	—
4D.....	C	10	15	26	24	21	5½	.....	.....	2	.....	Elliptical, 14x15. .	Rectangular siphons, 3½x14.
5D.....	B	10	.....	11	10	.....	.....	.....	.....	1	7	Circular.....	—
6D.....	B	10	19	16	24	.....	.....	.....	.....	2	5	Circular.....	Annular band, width 6 in.
7D.....	Turbine	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	—
8D.....	Turbine	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	—

* Type refers to type designation as used in figure 10.



Group of Ventilators Which Will Be Installed on the High School at Franklin Park, Illinois, by Ben J. Wagner, Sheet Metal Contractor at Glen Ellyn, Illinois, Made of 22-Gauge Toncan Metal. Three Skylights, 12x18 Feet, Will Also Be Placed Upon the Roof by Mr. Wagner. Those on Mr. Wagner's Payroll Are from Left to Right: Walter Blide, Leo Dieter, Elizabeth Hennicke, John Bremer, Mr. Wagner Himself, Wilbur Julius and Walter Morton, Mr. Wagner's Foreman. Mr. Wagner Believes That the Best Business Builder Is Good Workmanship Which Produces Satisfied Customers.

more effective the value is greater than one. As an example an average ventilator at a 10-mile wind velocity may have an effectiveness of say 85 per cent or less of the effectiveness of an open pipe; whereas a well designed ventilator may have an effectiveness of 115 per cent or more. In this manner it might be possible to compare the values ob-

tained by various testers.

This concludes article seven of the series of articles on Industrial Ventilation.

Anthracite Operators to Conduct Research Work in Domestic Heating

In order to conduct research work on improved methods of using

anthracite fuel in domestic heating, the Anthracite Operators Conference, New York, has engaged the Frost Research Laboratory, Norristown, Pa., headed by R. V. Frost. The scope of the work involves the investigation, testing and development of apparatus for the burning of anthracite, the removal of ashes and the control of temperature. Contact will be established with manufacturers of heating and related equipment, governmental bureaus and scientific and trade associations for the interchange of ideas and mutual assistance.

The purpose of this service is to provide without cost to manufacturers, designers and inventors adequate research facilities where tests of appliances and technical assistance upon the design of coal burning equipment may be obtained, subject to approval by the conference Committee.

It is hoped that the new arrangement will stimulate an intensive development of automatic apparatus for efficient burning of anthracite, the dustless removal of ashes and uniform control of combustion, to the end that coal as a fuel may be raised to the standard demanded by modern living conditions.

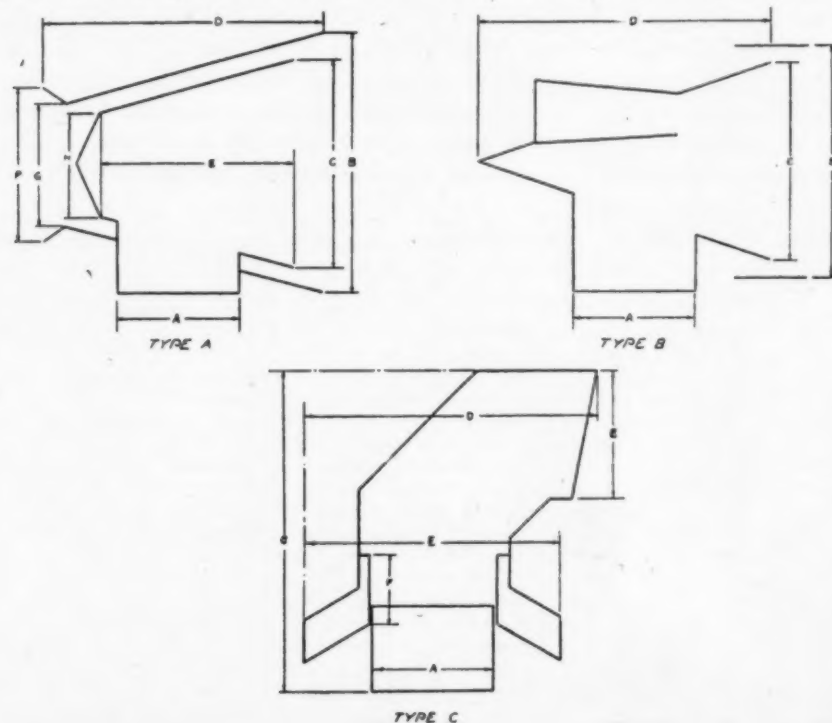


Figure 10

RANDOM NOTES AND SKETCHES

Art Lamneck just called up to remind us that the Ohio Sheet Metal Convention will be held in Columbus, at the Deshler-Wallick Hotel, February 12, 13 and 14th. Art says it is going to be the biggest and best convention ever held in the sheet metal industry, including even the Nationals. Wonderful entertainment, real speakers. Help of the Ohio salesmen is being enlisted in getting personal invitations to every sheet metal contractor in the state, and already 150 definite reservations have come in.

* * *

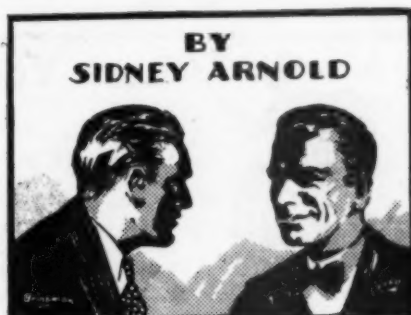
In the mail of Thursday morning of this week I received a letter from Jack Stowell, who makes it hot for everybody at Aurora, Illinois, and makes 'Em like it, which left me more or less breathless after my perusal of it was completed. What the letter said you may read for yourself:

"I trust you are safely back on the job. This may or may not be a news item, but printed as such in your paper would surely save me a great deal of private correspondence. Picture this if you can:

"You have been to a convention. It has been a good convention, you have learned something, eaten too much, slept too little, but all in all felt better towards your competitors and fellow men.

"You were tired, it was 6:30 and you hadn't eaten since noon and, therefore, were very hungry. You were a mile out of Westville, Indiana, and only ten miles from Valparaiso. There you were going to eat, and then only eighty miles more and you would be home—and oh, boy! All the poets had ever written about Home, Sweet Home was true, just then.

"But—it was snowing, it had been snowing, the road was slip-



pery; in fact, very slippery; you had not taken the time to put on chains; you were driving fast—too fast—on this road which ran parallel with the railroad.

"Well, anyway, it should have been marked, but it wasn't. About a block away, you saw the stone wall of the railroad opening loom up in front of you, but—too late. You gave it all the brake you could without skidding, you turned all you could, but the opening lacks three feet of being wide enough. You hit it, probably not doing a bit under forty; you bounce off the stone wall across the road and over a 25-foot embankment, landing right side up.

"You climb out, your first thought being that you are damn hungry and tired and 89 miles from home. You kinda shake yourself, find your anatomy all together, and decide you are pretty lucky to be alive.

"You walk back to Westville, one mile, thanking your stars that you have fur mittens and overshoes. It is now 7:00 o'clock and the town (300 population) is closed for the night.

"They eventually get your car, now worth about \$25 for junk, out of the swamp at 9:30, you get something to eat at 10:00 o'clock,



and about midnight you lay yourself down in a tourist bed which seems like the Ritz Hotel (?). All night long you just catch yourself falling over embankments as deep as the Grand Canyon.

"You eventually get home, Saturday p. m., still convinced that it was a darn good convention.

"The above, as Buck Taylor would say, is one man's opinion at the time he wrote it."

Congratulations, Jack, I should also say that you are lucky to be able to be among us. I know that he never touches a drop, but I also know that he drives too d—fast.

* * *

We had a visit on Thursday of this week from W. Gunton, Manager of Sales of the Success Heater Manufacturing Company, Des Moines, Iowa, and H. R. Griswold, Illinois representative of the same company. Mr. Gunton was on his way back to Des Moines by easy stages from the National Warm Air Heating Association convention

* * *

Also among the visitors to our office last week was D. R. Capes of the A-C Manufacturing Company, Pontiac, Illinois, manufacturers of automatic furnace fans, and Fred Bloomfield, of the Brillion Furnace Company, Brillion, Wisconsin, manufacturers of the Brillion warm air furnace.

* * *

"Water power is the greatest power there is," says Bill Laffin, of the Charles Johnson Company, Peoria.

"When his wife turns on the tears she can get a fur coat, a new automobile or a trip to California."

There certainly must have been a lot of water flowing in Peoria lately, because Mrs. Laffin has had all three of these things of late.

Here's One Good Way to Insure Advertising Matter Being Preserved

Make It a Message That Will Want to Keep Because of Its Utility Value

WARM air furnace installers are constantly on the lookout for new and result-producing methods of advertising their businesses. A lot of methods have been tried with only indifferent results. A lot more of them have been complete flops, partly perhaps because of poor execution and partly no doubt because misdirected.

The thing to bear in mind when any type of advertising is being planned is to see that the story is properly told; to see that proper instructions are given regarding the



"Lest You Forget" Best Time Is NOW

To leave your order for that new furnace.
To have the present system remodeled or repaired.
To have your furnace cleaned and adjusted.
To have heating and ventilating systems installed.
To have chimney and pipe connections perfected.
To have your roofs, gutters and conductors made water-tight.
To have window boxes and other specialties made.

R. L. SPELLERBERG

"The Warm Air Man"

343 West Eighth Street

DUBUQUE, IOWA



One of Mr. Spelterberg's Blotters.

Hang this Card Near Furnace

Follow instructions as closely as practicable, taking draft of chimney into consideration — and remember that a furnace will always work the same, provided, conditions are kept the same, in other words, dispose of ashes made daily, keep fuel bed just so high and check just so much as is necessary and no more.

To start fire, see that front and check drafts are closed and damper in smoke pipe open.

COKE

Assuming the grate is free from ashes, ignite a hand full of paper or other combustible material and throw it into the furnace following up with enough paper and kindling to ignite the coke; there should be enough coke put in to form a bed about four inches deep.

When coke is nearly or thoroughly burnt through, add enough coke to fill fire pot two-thirds to level full. When it is warm enough, open check one to two inches or more, if necessary, if not warm enough, keep check closed until it is.

This fire should be allowed to rest until quite burnt down. By this time a bed of ash will be on the grate and, after closing the check and opening the damper, the furnace may be refueled to fire pot level full in very mild weather, in severe weather as much coke should be put in furnace as it will hold, heaping up to an inch or two of fuel door. Then open check one or two inches, or more, and regulate according to the draft of chimney. Replenish every 6 to 12 hours and remove accumulated ashes every 12 to 36 hours as needed.

To replenish every hour or two burns more fuel and gives less heat.

To keep fire through the night, it should be handled as during the day, except that the check should be opened immediately after replenishing, but not too much.

An outside temperature goes down, the chimney draft becomes stronger and fire will burn more freely.

HARD COAL

Hard coal may be burned as coke, except that the fire pot need only be filled level or a little better than level full in cold weather.

SOFT COAL

Soft coal may be burned as hard coal or coke, except when replenishing, the fire bed should not be covered with fresh fuel. Some live fire should be exposed at all time, either by moving it to the right or left alternately, or heaping it up in the center with the fresh fuel thrown in at side or around it; this promotes better combustion. Should the fire become very low, don't disturb it, but place a little kindling on it, then some coal or coke. For quick fire keep check closed. If just before retiring open check one or two inches and note nice fire the next morning.

WOOD

If burning wood in a round fire pot furnace, it is advisable to close grate with a sheet of iron over them, but not closed at the front, and use stove length wood set on end.

HERE ARE A FEW DONT'S

DON'T open front draft, (or close pipe damper too tight.)
DON'T open check when it is not warm enough.
DON'T open check draft too much.
DON'T keep too many ashes on grate and expect comfort.
DON'T rock triangular bar grate, but turn over one-third turn.
DON'T neglect shaking down a little ashes daily, if necessary.
DON'T burn fire hard enough to make clinkers.
DON'T shake good fuel through grate, as that is waste.
DON'T allow ashes in ash pit to bank up under grate.
DON'T burn or vary grate and blame the dealer.
DON'T burn galvanizing off the smoke pipe.
DON'T force flame into smoke pipe.
DON'T replenish every hour or two and expect results on economy.
DON'T try to get along without humidity.
DON'T think a furnace will run indefinitely without cleaning.
DON'T remove ashes immediately after shaking the grate.
DON'T remove ashes before they are moistened.
DON'T buy a furnace that keeps the basement as warm or warmer than the living room.

A FEW DO'S

DO keep the front draft closed and save fuel.
DO control the fire with the check draft.
DO use smoke pipe damper only when necessary.
DO keep the fuel bed spongy.
DO open check as much as necessary — no more.
DO remove ashes from grate as much as necessary.
DO dampen ashes before removing.
DO put on ample fuel when replenishing.
DO replenish at regular intervals.
DO handle the fire so that the house will be warm when arising.
DO keep evaporating pan filled.
DO treat your furnace as you would your automobile or radio.

If not successful with the furnace by operating as above suggested, there is something wrong either in the management or with the heating plant, and an expert should be called in.

WE ARE AT YOUR SERVICE

R. L. SPELLERBERG & SON

343 WEST EIGHTH STREET, DUBUQUE, IOWA



The Card to Hang Near Furnace

use of the article purchased so that the greatest amount of pleasure or utility will be derived from its use.

Working along these lines, R. L. Spellerberg & Son, 343 West Eighth Street, Dubuque, Iowa, developed a very effective method of keeping his name before the buyer of the furnace and also doing all he can to insure himself that the furnace will be correctly fired.

The accompanying card, which in the original measures 10x13 inches, contains brief instructions on how to start a fire and how properly to tend it using the different types of fuel. This card hung near the furnace is an assurance that the owner will be started off right, and in the event that trouble should develop with which he could not himself cope, Spellerberg & Son would be the first one to be called in. This card can be and is being used with good success not only with Mr. Spellerberg's actual customers, but can be sent to people in whose homes warm air furnaces are installed.

In order to make the direct-by-mail advertising the most successful, the envelope which the prospect receives must receive something more than just a letter, and something of value to the prospect.

Master Sheet Metal Contractors' Association of Milwaukee, Wisconsin, Oppose Ordinance

The Master Sheet Metal Contractors' Association of Milwaukee met December 5, 1928, in Milwaukee.

Meeting was called to order at 8 p. m., with President Reinke in the chair and thirteen members present.

The matter of Mr. Vogel's resignation and nonpayment of dues was discussed and ordered held over until the next meeting. The secretary was also instructed to write letters to all members who have not paid their dues and to call their attention to the by-laws of the association that all dues are payable yearly in advance, and failure to pay same would subject them to be dropped from the rolls of the association.

Motion was made and carried that payment of the association's share of the yearly rent for the hall to the Builders and Traders Exchange be made.

The committee on paid secretary and also on the survey bureau will have a report ready at the next meeting.

Mr. Jeske reported in reference to the proposed charter ordinance of the city of Milwaukee providing for the classification of contractors who desire to compete for city contracts, stating that the sentiment was that in spite of all opposition, the common council was determined to put through some kind of an ordinance and the opinion of all the contractors who attended the meeting in reference to this ordinance was that inasmuch as it could not be stopped entirely it would be advisable to get it as much in favor of the members as possible. Motion was made and seconded that the association is opposed to this ordinance and that Mr. Jeska be appointed to act as a committee of one to voice sentiment accordingly at the next meeting of the General Contractors. He was also instructed that if nothing can be done to stop this ordinance from going through, to do as much as he can to have the ordinance read as favorably as possible to the sheet metal industry.

Indiana Fur-Met Killed in Automobile Accident

George Thomas, traveling salesman for the Standard Metal Company, Indianapolis, Indiana, was fatally injured in an automobile accident last week.

A car driven by Mr. Thomas collided with an automobile at Central Avenue and Fall Creek Boulevard, Indianapolis.

Mr. Thomas' injuries were considered slight when he was examined by a neighborhood physician. He was taken to his home by a passing motorist, where he died a few minutes later.

Internal injuries caused his death, according to Coroner Charles H. Keever, who investigated.

Mr. Thomas was driving north with his wife on Central Avenue. Witnesses told police that Mr. Thomas stopped at the boulevard, started across the intersection, and was struck by the other car being driven east on the boulevard. His automobile was hurled into the air and overturned. Mrs. Thomas suffered slight cuts and bruises.

Mr. Thomas was a traveling salesman for the Standard Metal Company of Indianapolis. He had lived in Indianapolis the last twelve years. He was born on a farm near Crawfordsville and was a member of the Masonic order and the Central Avenue M. E. Church. His widow and two sisters survive.

A. Jackson Wright, Borden Stove Company, Philadelphia, Dies

A. Jackson Wright, widely known among builders of Philadelphia, died at the Stetson Hospital recently. Ill for several months, Mr. Wright was taken to the hospital from his home at 439 Hansberry street, two weeks ago. The immediate cause of his death was heart disease. He was in his seventy-third year, a member of Perkins Lodge 402, F. and A. M., and active in the Methodist Episcopal Church of the Advocate.

Mr. Wright was connected with the warm air heating business almost since boyhood, and for the last

several years represented the Borden Stove Company, Philadelphia. He is survived by his widow, Mrs. C. Wright, a daughter, Edith, and a son, Mont. H. Wright.

Standard Steel Building Manufacturers Organize Trade Institute

The Standard Steel Building Institute, composed of manufacturers of standard steel buildings, has just been organized for the purpose of cooperative trade extension.

At a meeting held in the Stevens Hotel, Chicago, Thursday, December 6, the constitution and by-laws were adopted and the following officers were elected:

C. I. Auten, Truscon Steel Company, Youngstown, Ohio, President; W. A. Knapp, Butler Manufacturing Company, Kansas City, Missouri, Vice President; H. O. Davidson, Blaw-Knox Company, Pittsburgh, Pennsylvania, Secretary-Treasurer.

Representatives were present also from the Stefco Steel Company, Michigan City, Indiana; Maryland Metal Building Company, Baltimore, Maryland, and International Derrick and Equipment Company, Columbus, Ohio.

It will be the aim of the Institute to acquaint American industry with the unusual merits of standard steel buildings, such as low first cost, speed of erection, durability, portability, ease of alteration, fire safety and lightning protection.

As congestion increases, particularly in and around big industrial centers, the question of fire safety becomes more and more important. Coupled with this condition is the demand of industry for a type of industrial housing that can be economically and speedily erected, also a type that can be readily altered without excessive cost. Constant change frequently makes it unwise to invest in the heavier types of construction, particularly in the case of young or newly organized concerns. The Institute points out that the standard steel building is ideally designed to solve such problems.

BEST BUSINESS GETTER*(Concluded from Page 103)*

fective system of pipes will make the winter uncomfortable for them they take good care to see that the furnace installation is done right. People get together and talk about those things, and one defective furnace in a neighborhood will make every one more than careful when they have work done."

Mr. Pietsch says that ten years ago very few people came into his shop to see how work is done. Today, however, this situation has almost been reversed. Many people for whom he is doing work come into the shop to see how the job is progressing. Many of them ask questions to check up on the progress. This shows, Mr. Pietsch believes, that they have taken the time to study up on heating problems and how it will affect their comfort.

"I am glad to see that people are taking this interest in sheet metal construction," declared Mr. Pietsch. "It will mean that they will learn the value of sheet metal and will use it for other construction jobs about the house.

"During the time I have been in business I have never solicited extra work," says Mr. Pietsch. "We have always had enough work on hand to keep us busy. One contractor will recommend us to another and that is the way we get most of our business. In fact, we strive to do our work so well that the contractors will want to recommend us in all cases."

Community and Church Paper Advertising Brings Good Results

Mr. Pietsch says that maintaining this sort of a reputation for quality work is not as easy as it may seem. There are many different problems which come up in sheet metal construction which must be handled the right way. Judgment in installing a job is very essential and usually construction differs with each job.

"Advertising in the right kind of papers has brought us considerable business also," declared Mr. Pietsch. "We advertise in community papers,

in church papers, in fraternal papers and the like, and find that it brings us in many inquiries. We do not believe in a large advertising campaign through metropolitan newspapers for a concern of our size."

Mr. Pietsch states that whenever his men go into a home to do a job and see a place where they can suggest the use of sheet metal, they do it. This has resulted in considerable business. In the case of new houses where the work is done for a contractor this is not always a wise policy, because the contractor may think the firm is telling him what to do. However, in the case of work done in old homes for private parties, suggestions of this kind are often welcomed. In many cases suggestions made by Mr. Pietsch and his employees will correct a problem that the home owner has been wondering about, and in this way another friend is made.

Friedley-Voshardt Co., Chicago, Has Attractive Souvenir Novelty in Lily Lamp

Friedley-Voshardt Company, 733 South Halsted Street, Chicago, manufacturers of ornamental sheet metal work and statuary, have recently produced, in line with their general policy of keeping up to the minute, a novelty in the form of a hand-hammered ornamental art lily



The Lily Lamp

lamp, made of copper in three styles and sizes and equipped with either red, white or blue colored electric bulbs.

The accompanying illustration shows the lamp as it appears in the

finished form. The flower contains the light bulb, while the light cord is carried through the flower stem which goes down through the bulb presumably growing in the dish. The whole is set upon a copper base and is equipped with a match box holder, making it a very artistic and useful as a holiday souvenir. Prices on this novelty can be had by writing Friedley-Voshardt Company, 733 South Halsted Street, Chicago, Illinois. The company is in a position to make immediate shipments on this novelty.

WHO'S WHO, WHERE!

MINNEAPOLIS, MINN.—The Peterson Cash Hardware, 1828 East 42nd Street, has discontinued its hardware department and hereafter Mr. Peterson will give his time exclusively to his sheet metal business at the same address.

SAN FRANCISCO, CAL.—The Anderson Sheet Metal Works has engaged in business at 323 Washington Street.

MARSHFIELD, WIS.—Joseph V. Metteka & Son has the contract for the sheet metal work on the Lutheran church and parsonage in that city.

SIoux CITY, IA.—The Norfolk Furnace Company, East Eighth and Division Streets, has been awarded the hot air heating contracts for residences of C. J. Robar and C. S. Anderson.

IOWA CITY, IA.—Miller & Sybil have begun the construction of their \$4,000 store and tinshop on South Dubuque Street, near Burlington.

MARSHALLTOWN, IA.—The Lenox Furnace Company has the warm air heating contract for foundry building of Gra-iron Foundry Corporation.

CEDAR RAPIDS, IA.—The Hawkeye Tin Shop, 92 Second Avenue East, has the warm air heating contract for three residences of Henry S. Ely & Company.

IOWA CITY, IA.—Schuppert & Koudelka have been awarded the heating and sheet metal work contract for residence of E. M. Piper in that city.

PORTLAND, ORE.—E. A. Mallett, 1485 East 17th Street, has been awarded the sheet metal contract for residence of Thomas J. Hayes.

PORTLAND, ORE.—Feig's Furnace & Sheet Metal Shop, 774 Union Avenue North, has been awarded the heating and sheet metal contract for residence of Wm. Larsen.

SAN FRANCISCO, CAL.—L. Davison, 1670 San Jose Avenue, has been awarded the sheet metal contract for B. S. Fong apartment building.

SAN FRANCISCO, CAL.—The Forderer Cornice Works, 269 Potrero Avenue, has the sheet metal and hollow metal door contracts for apartment building of Lakeview Building Corporation.

SAN MATEO, CAL.—The Izmirian Sheet Metal Works, 416 Second Street, has the tinning contract for residence of Mary Starr Grass, in Hillsborough Park, Cal.

SAN FRANCISCO, CAL.—The Fire Protection Products Co., 110 Sixteenth Street, has been awarded the sheet metal contract for the office building of Pacific Telephone & Telegraph Company in Livermore, Cal.

December Has Impetus for Record

Steel Sales and Output High—Buying in Non-Ferrous Metals Slows Down

THE iron and steel industry having come up to the middle of December with sales and production only mildly impaired by seasonal conditions, another monthly steel record seems in the making. November, with a daily rate of 163,822 gross tons of ingots, surpassed all previous Novembers, topping 1927 by 30 per cent, and if December holds within 8 per cent of last month—as now seems possible—it will be the sixth consecutive record month.

Including the 4,259,380 tons of November, the eleven-month ingot total stands at 45,837,791 tons. In all 1926, the banner year, only 46,597,475 tons was produced. An estimated 3,900,000 tons for December puts 1928 across the line with 3,150,000 tons to spare.

Sheets are noteworthy for their vigor in all markets. Orders booked by Pittsburgh and Youngstown mills have rarely been exceeded in December. An increasing volume of business for the first quarter is being booked at the new prices, generally \$2 higher than for the current quarter, and makers are insisting that specifications be in by Dec. 15. Some large automotive users have covered at the new levels. Chicago mills have extended their backlogs on blue annealed to three weeks.

Buying of nonferrous metals has become quiet, following large business in one metal after another all through the autumn. Shipments continue large against these orders and unfilled tonnage still is big for a month to more than two months ahead. Prices are firm and unchanged.

Tin is an exception in respect to quotations with a break of 4 cents in six market days. Some consumer buying was done on the way down, so this metal has continued active later than the others. The price had been going up rapidly on

account of speculative buying in London. Output has been running ahead of large consumption.

Copper

Buying has been unusually light in the past week for both domestic and export shipments. Shipments, however, are going out on schedule, and refineries still are in a tight position though their situation appears to be easing up slowly. The increased output of the mines is reaching the refineries, while shipments on the other hand are not quite so urgent as they were. Prices are firm and unchanged.

Tin

From the top point of 53.50 cents reached about a week ago on spot Straits, the highest level since early in the year, the market fell rapidly to about 49.50 cents Saturday. One powerful speculative faction in London was said to be selling the market down, while another, which had been supporting the price by taking stocks out of the market, was said to have withdrawn from the market. The break was so rapid it was overdone and rebounded more than 1/2 cent Monday noon. These events, together with the newness of the new metal exchange here, caused confusion. Yet consumers bought a good quantity of scattered positions in the past week.

Lead

Business has been large recently but much lighter in the past few days. Much of the recent buying was for December delivery, apparently showing that the market is in a sound position. Prices are firm and unchanged.

Zinc

Prime western is quiet and naturally so after the big buying scare. Sellers assert there has been a slight increase in production as the result of the 5 cent advance in October, but that inasmuch as new equipment has to be purchased in order to expand production materially, devel-

opments along this line necessarily have been slow. Meanwhile, the market on toluol continues unchanged.

Commercial xylol and in a lesser degree, solvent naphtha also are moving well, lacquer manufacturers being forced to substitute this material for toluol in a certain degree. Prices on these products are steady.

Pig Iron

Pittsburgh pig iron producers continue to ship steadily on old orders but new business still is restricted to small purchases. Lack of large tonnages gives the market the appearance of dullness, but the general run of small orders provides a fairly high aggregate.

On No. 2 foundry iron \$18, valley, still prevails. An inquiry from the Westinghouse Electric & Mfg. Co. is understood to be smaller than years ago due to its trend away from iron castings. The company also is buying an unstated tonnage of Bessemer iron.

With all melters covered for the next 30 days at Chicago pig iron sales are confined to small spot orders or supplemental contract purchases. Shipments are holding up approximately to the November rate, but a recession is expected soon.

Competition is active in western Michigan. Several malleable melters in this territory have been forced to add to earlier purchases due to increases in their orders. Chicago prices continue firm at \$20, base.

Sales of pig iron at Birmingham are fairly active, mainly in small lots for delivery during the next two weeks. Larger melters have placed orders for delivery during first quarter.

The lead of the Sloss-Sheffield Steel & Iron Company in advancing the base price of \$17 has not been followed actively by other producers. Surplus stocks of foundry iron are being reduced.

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly

METALS

PIG IRON

Chicago Fdy.,	
No. 2	\$20 00
Southern Fdy. No. 2	22 51
Lake Superior Charcoal	27 04
Malleable	20 00

FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

IC	20x28 112 sheets	\$22 50
IX	20x28	25 50
IXX	20x28 56 sheets	14 50
IXXX	20x28	15 50
IXXXX	20x28	17 90

TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets	\$26 70
IX 20x28, 40-lb. 112 sheets	29 70
IC 20x28, 25-lb. 112 sheets	23 20
IX 20x28, 25-lb. 112 sheets	25 20
IC 20x28, 20-lb. 112 sheets	20 25
IX 20x28, 20-lb. 112 sheets	23 00

"ARMCO" INGOT IRON PLATES

No. 8 ga.—100 lbs.	\$4 15
3/16 in.—100 lbs.	4 05
3/4 in.—100 lbs.	3 85

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12 00
Cokes, 90 lbs., base, 20x28	12 20
Cokes, 100 lbs., base, 20x28	12 40
Cokes, 107 lbs., base, IC	
20x28	12 75
Cokes, 135 lbs., base, IX	
20x28	14 75
Cokes, 155 lbs., base 2X,	
56 sheets	8 50
Cokes, 175 lbs., base 3X,	
56 sheets	9 35
Cokes, 195 lbs., base 4X,	
56 sheets	10 25

BLUE ANNEALED SHEETS

Base 10 ga.—per 100 lbs.	\$3 25
"Armco" 10 ga.—per 100 lbs.	4 15

ONE PASS COLD ROLLED BLACK

No. 18-20.....per 100 lbs.	\$3 00
No. 22.....per 100 lbs.	3 75
No. 24.....per 100 lbs.	3 80
No. 26.....per 100 lbs.	3 90
No. 27.....per 100 lbs.	3 95
No. 28.....per 100 lbs.	4 05
No. 29.....per 100 lbs.	4 20
No. 30.....per 100 lbs.	4 30

"ARMCO" GALVANIZED

"Armco" 24.....per 100 lbs.	\$8 15
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GALVANIZED

No. 16.....per 100 lbs.	\$4 15
No. 18.....per 100 lbs.	4 30
No. 20.....per 100 lbs.	4 45
No. 22.....per 100 lbs.	4 50
No. 24.....per 100 lbs.	4 65
No. 26.....per 100 lbs.	4 90
No. 27.....per 100 lbs.	5 00
No. 28.....per 100 lbs.	5 15
No. 30.....per 100 lbs.	5 55

BAR SOLDER

Warranted	
50-50.....per 100 lbs.	\$32 00
Commercial	
45-55.....per 100 lbs.	29 00
Plumbers.....per 100 lbs.	26 00

ZINC

In Slabs.....	\$ 7.25
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SHEET ZINC

Cask Lots (600 lbs.).....	\$11 25
Sheet Lots.....	12 25

BRASS

Sheets, Chicago Base.....	20 1/2c
Mill base.....	19 1/2c
Tubing, brazed base.....	28 1/2c
Wire, base.....	21c
Rods, base.....	18 1/2c

COPPER

Sheets, Chicago base.....	25c
Mill base.....	24c
Tubing, seamless base.....	26 1/2c
Wire, No. 9, B & S Ga.....	22c
Wire, No. 10, B & S Ga.....	22 1/2c
Wire, No. 11, B & S Ga.....	22 1/2c

LEAD

American Pig.....	\$7 50
Bar.....	8 50

TIN

Pig Tin.....per 100 lbs.	\$58 00
Bar Tin.....per 100 lbs.	59 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16.....	6c per lb.
Roll board.....	6 1/2c per lb.
Mill board 3/32 to 1/2.....	6c per lb.
Corrugated Paper (350 sq. ft. to roll).....	\$6 00 per roll

BRUSHES

Furnace Pipe Cleaning	
Bristle, with handle, each	\$0 75
Flue Cleaning	
Steel only, each.....	1 25

CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 44
American Seal, 10-lb. cans, net	88
American Seal, 25-lb. cans, net	2 25
Pecora.....per 100 lbs.	7 50

CHIMNEY TOPS

Adams' Revolving	Wt. Doz.	Price Doz.
4 in.....	21 lbs.	\$11 00
6 in.....	24 lbs.	11 50
7 in.....	30 lbs.	13 50
8 in.....	32 lbs.	15 00
9 in.....	51 lbs.	16 50
10 in.....	56 lbs.	18 00
12 in.....	66 lbs.	22 00
14 in.....	110 lbs.	36 00

CLINKER TONGS

Each.....	\$1 50
-----------	--------

CLIPS

Damper	
No-Rivet Steel, with tail	
pieces, per gross.....	\$9 50
Rivet Steel, with tail	
pieces, per gross.....	7 50
Tail pieces, per gross.....	3 40

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier.....per lb.	40c
2 1/2 lb.....per lb.	45c
2 lb.....per lb.	45c
1 1/2 lb.....per lb.	55c
1 lb.....per lb.	60c

CORNICE BRACKES

Chicago Steel Bending	
Nos. 1 to 6B.....	Net

CUT-OFFS

Gal., plain, round or cor. rd.	
26 gauge.....	35c
28 gauge.....	35c

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.....	\$1 60
8 inch, each 25c, doz.....	2 20
9 inch, each 30c, doz.....	3 00
10 inch, each 32c, doz.....	3 20
Smoke Pipe	
7 inch, doz.....	\$1 60
8 inch, doz.....	2 20
9 inch, doz.....	3 00
10 inch, doz.....	3 75
12 inch, doz.....	4 50

ADAMS No. 1 CHECK

Check and Collar Complete	
8 inch, each.....	2 00
9 inch, each.....	2 25
End Check Only	
8 inch, each.....	1 40
9 inch, each.....	1 55
Collar Only	
8 inch, each.....	50
9 inch, each.....	65
No. 2 CHECK	
8 inch, each.....	1 00
9 inch, each.....	1 00
10% Disc. on Adams No. 1 and No. 2 Check	
Diamond Smoke Pipe	
7 inch, doz.....	\$ 2 00
8 inch, doz.....	2 25
9 inch, doz.....	2 50
10 inch, doz.....	6 00

Adams' Sheet Metal

7 inch, doz.....	\$ 1 60
8 inch, doz.....	2 20
9 inch, doz.....	2 60
10 inch, doz.....	2 80
12 inch, doz.....	3 50
14 inch, doz.....	5 00

EAVES TROUGH

Galv. Crimpedge, crated 75 & 10%	
Zinc, "Barnes".....	60%

ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp.	
28 Gauge.....	60%
26 Gauge.....	45%
24 Gauge.....	15%

Galv. & Terne Steel

Plain Rd. and Rd. Corr.:	
28 Ga.....	60%
26 Ga.....	45%
24 Ga.....	15%

Square Corrugated

No. 28 Gauge.....	50%
26 Gauge.....	35%

Portico Elbows

Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested.....	70 & 5%
Nested Solid.....	70 & 5%

Sq. Corr., A. & B. & Octagon

28 Ga.....	50%
26 Ga.....	35%

Portico

1", 1 1/4", 1 1/2".....	45%
-------------------------	-----

Copper

16 oz., all designs.....	50%
--------------------------	-----

Zinc—

All styles.....	60%
-----------------	-----

ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge. Doz.	
5-inch.....	\$1 15
6-inch.....	1 25
7-inch.....	1 75

Special Corrugated

6-inch.....	\$1 00
7-inch.....	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge. Uniform Blue.	
5-inch.....	\$1 60
6-inch.....	1 75
7-inch.....	2 10

WOOD FACES—60% off list.

FENCE

726-6-12 1/4% (100 rods).....	\$28 68
1948-6-14 1/4% (100 rods).....	43 62

FILES AND RASPS

Heller's (American).....	50-10%
American.....	60-10%
Arcade.....	50%
Black Diamond.....	50%
Eagle.....	50%
Great Western.....	50%
Kearney & Foot.....	50%
McClellan.....	50%
Nicholson.....	50%
Sammons.....	60%

FIRE POTS

Geo. W. Diener Mfg. Co.	Es.
No. 03 Gasoline Torch, 1 qt.	\$ 5 13
No. 0250, Kerosene, or Gasoline Torch, 1 qt....	6 50
No. 10 Tinner's Furn. Square tank, 1 gal.....	11 30
No. 15 Tinner's Furn. Round tank, 1 gal.....	10 70
No. 21 Gas Soldering Furnace.....	8 00
No. 110 Automatic Gas Soldering Furnace.....	10 50

Quick Meal Stove Co.

Vesuvius, F. O. B. St. Louis 20%	
(Extra Disc. for large quantities.)	

GALVANIZED WARE

Pails (Galv. after made), 10-qt.	\$2 00
Tubs (Galv. after made), No. 1	5 75
No. 2	6 50

GLASS

Single Strength, A, all brackets.....	37%
Single Strength, B, all brackets.....	33-5%
Double Strength, A, all brackets.....	37%
Double Strength, B, all brackets.....	33-5%

HANGERS

Conductor Pipe	
Milcor Perfection Wire.....	25%
Milcor Triplex Wire.....	10%

Eaves Trough

Milcor Steel (galv. after forming) List.....	plus 12 1/4%
Milcor Selflock E. T. Wire, List.....	plus 50%

HOOKS

Conductor	
"Direct Drive" Wrought Iron for wood or brick.....	15%

HUMIDIFIER

"Front-Rank," Automatic In single lots.....	50%
In lots of 10 or more.....	50-5%
In lots of 25 or more.....	50-10%
Vapor pans, etc., each.....	50%

LIFTERS

Stove Cover	
Coppered.....per gro.	\$6 00
Alaska.....per gro.	4 75

MALLETS

Tinners	
Hickory.....per doz.	\$3 25

MITRES

Galvanized steel mitras.	
28 Ga.....	70
26 Ga.....	80-20

NAILS

Cut Steel, base.....	\$4 00
----------------------	--------

Wire

Common.....	\$3 10
Cement Coated.....	3 10

(Continued on Page 124)

OLD ROOFS—Make Them Rust Proof and Leak Proof with SPANISH METAL TILE



OLD Roofs badly in need of repairs, and at the mercy of storm and fire—new homes, garages and buildings springing up everywhere—what real opportunity for sheet metal contractors who elect to lay the Nationally advertised Wheeling Spanish Metal Tile Roofs!

Suitable for practically every type of home and building. Tiles are easy to lay—fittings are easy to apply. Superior to other types because fire-proof, leak-proof, rust-proof and lightning-proof. The buyer gets a durable and attractive roof at low cost, and you profit as well.

For the promotion of your business and prestige use Wheeling Spanish Metal Tile and fittings, which are fabricated from Cop-R-Loy, the copper alloyed steel, and guaranteed Hand Dipped in Pure Molten Zinc.



Wheeling

WHEELING CORRUGATING COMPANY, Wheeling, W. Va.

New York Philadelphia Chicago Kansas City St. Louis Richmond
Chattanooga Minneapolis Des Moines Columbus, Ohio

ADVERTISERS' INDEX

The dash (—) indicates that the advertisement runs on a regular schedule but does not appear in this issue.

A		L	
A-C Mfg. Co.	99	Lamneck & Co., W. E.	94
Aeolus-Dickinson Co.	—	Lamson & Sessions Co., The.	—
Agricola Furnace Co.	—	Langenberg Mfg. Co.	—
Akrat Ventilators, Inc.	130	La Salle Machine Works.	—
American Brass Co.	—	Lennox Furnace Co.	—
American Foundry & Furnace Co.	—	Linde Air Products Co.	—
American Furnace Co.	—	Lupton's Sons Co., David.	—
Armco Distributors Assn. of America.	—	M	
American Wood Register Co.	—	Marshall Furnace Co.	—
Arex Co.	—	May-Felbeger Co.	—
Auer Register Co.	—	McIlvaine Burner Corp.	99
B		Meyer & Bros. Co., F.	—
Barnes Metal Products Co.	—	Meyer Furnace Co., The.	—
Beckwith Co., The.	—	Midland Furnace Co.	—
Beh & Co.	96	Milwaukee Corr. Co., Back Cover	—
Berger Bros. Co.	125	Moncrief Furnace Co.	—
B. & F. Mfg. Co.	96	Mt. Vernon Furn. & Mfg. Co.	—
Berger Co., L. D.	125	Mueller Furnace Co., L. J.	—
Bertsch & Co.	125	N	
Brillion Furnace Co.	—	National Regulator Co.	—
Burgess Soldering Furnace Co.	—	New Jersey Zinc Sales Co., The.	Front Cover
Burton Co., W. J.	—	O	
C		Osborn Co., The J. M. & L. A.	—
Chandler Pump Co.	—	Oxweld Acetylene Co.	102
Cleveland Castings Pattern Co.	97	P	
Colburn Heater Co.	—	Parker, Kalon Corp.	—
Chicago Metal Mfg. Co.	125	Peck, Stow & Wilcox.	—
Connors Paint Co., Wm.	96	Peck, H. E.	129
Copper & Brass Research Association.	—	Prest-O-Lite Co., Inc.	—
D		Q	
Dieckmann Co., Ferdinand.	—	Quick Meal Stove Co.	—
Diener Mfg. Co., Geo. W.	—	Quincy Pattern Co.	97
Dreis & Krump Mfg. Co.	125	R	
E		Richardson & Boynton Co.	95
Eiermann, Wm.	—	Robinson Co., A. H.	—
F		Rudy Furnace Co.	—
Fanner Mfg. Co.	96	Rybolt Heater Co.	—
Floral City Heater Co.	—	Ryerson & Sons, Inc., Jos. T.	125
Fox Furnace Co.	—	S	
Forest City-Walworth Run Fdy. Co.	—	Sheer Co., H. M.	97
Friedley-Voshardt Co.	—	Sheet Steel Trade Ex. Comm.	—
G		Standard Furn. & Supply Co.	—
Grand Rapids Wire Products Co.	—	Standard Foundry & Furn. Co.	—
Graff Furnace Co.	111	Standard Ventilator Co.	125
Gerock Bros. Mfg. Co.	—	Stearns Register Co., The.	—
H		St. Louis Tech. Inst.	—
Harrington & King Perf. Co.	125	Stover Mfg. & Engine Co.	—
Hart & Cooley Co.	101	Sturtevant Co.	—
Henry Furnace & Foundry Co.	—	Success Heater Mfg. Co.	—
Hess-Snyder Company, The.	97	T	
Hessler Co., H. E.	—	Taylor Co., N. & G.	—
Horan Stay Hanger Co.	—	Technical Products Co.	—
Homer Furnace Co.	—	The Thatcher Co.	—
Hotel Sinton.	—	Tuttle Register Dust Catcher Co.	—
Hyro Mfg. Co.	—	XXth Century Htg. & Vent. Co.	—
Independent Register & Mfg. Co.	—	U	
I		Unishear Co.	—
Inland Steel Co.	—	V	
International Heater Co.	—	Vedder Pattern Works.	97
Interstate Machinery Co.	—	Viking Shear Co.	—
K		W	
Kernchen Co.	130	Warm Air Furnace Fan Co.	—
Kirk-Latty Co.	97	Waterman-Waterbury Co.	—
		Western Steel Products Co.	—
		Wheeling Corr. Co.	123
		Whitney Mfg. Co., W. A.	—
		Wilkowski Mfg. Co.	130
		Williamson Heater Co.	—
		Wise Furnace Co.	—
		Wonder Gas Appliance Co.	—

Markets—Continued from Page 122

PASTE		RIDGE ROLL	
Asbestos Dry Paste:		Galv., Plain Ridge Roll,	
200-lb. barrel	\$14 00	b'dld	75-15-3%
100-lb. barrel	7 50	Galv., Plain Ridge Roll	
35-lb. pail	4 25	crated	75-15%
10-lb. bag	1 00	Globe Finials for Ridge Roll.	50%
5-lb. bag	55		
2½-lb. cartons	25		
POKERS, FURNACE		SCREWS	
Each	\$0 75	Sheet Metal	
POKERS, STOVE		7, ¼x¼, per gross	\$0 53
Nickel Plated, coil handles,		No. 10, ¼x3/16, per gross ..	53
per doz.	1 10	No. 14, ¼x¼, per gross ..	53
W't Steel, str't or bent,			
per doz.	\$0 75		
PIPE		SHEARS, TINNERS' & MACHINISTS'	
Conductor		Viking	\$23 00
Cor. Rd., Plain Rd., or Sq.		Lennox Throatless	
Galvanized		No. 18	3%
Crated and nested (all		Shear blades	10%
gauges)	75-7½%	(f. o. b. Marshalltown, Iowa)	
Crated and not nested			
(all gauges)	75-2½%		
Furnace Pipe		SHIELDS, ADJUSTABLE RADIATOR	
Double Wall Pipe and		No. 1 "Gem" 11" to 17"	30%
Fittings	60%	No. 2 "Gem" 14" to 24"	30%
Single Wall Pipe, Round		No. 3 "Gem" 35" to 65"	30%
Galvanized Pipe	60%		
Galvanized and Tin Fit-			
tings	60%		
Lead		SHOES	
Per 100 lbs.	\$12 50	Galv. 28 Gauge, Plain or cor-	
Stove Pipe		rugated round flat crimp	60%
"Milcor" "Titelock" Uniform Blue		26 gauge round flat crimp	45%
Stove		24 gauge round flat crimp	15%
28 gauge, 5 inch U. C.			
nested	11 00		
28 gauge, 4 inch U. C.			
nested	12 00		
28 gauge, 7 inch U. C.			
nested	14 00		
30 gauge, 5 inch U. C.			
nested	10 25		
30 gauge, 6 inch U. C.			
nested	11 00		
30 gauge, 7 inch U. C.			
nested	13 00		
T-Joint Made up		SNIPS, TINNERS	
6-inch, 28 ga. per doz.	\$ 3 40	Clover Leaf	40 & 10%
All Zinc		National	40 & 10%
No. 11, all styles	60%	Star	50%
		Milcor	Net
PULLEYS		SQUARES	
Furnace Tackle	per doz. \$0 25	Steel and Iron	Net
..... per gro.	\$ 50	(Add for bluing \$3 per doz. net)	
Furnace Screw (enameled)		Mitre	Net
..... per doz.	75	Try	Net
PUTTY		Try and Bevel	Net
Commercial Putty, 100-lb.		Try and Mitre	Net
Kits	\$3 50	Fox's	per doz. \$6 00
QUADRANTS		Winterbottom's	10%
Malleable Iron Damper	10%		
REDUCERS—Oval Stove Pipe		STOPPERS, FLUE	
Per Doz.		Common	per doz. \$1 10
1-6, 28-gauge, 1 doz. in		Gem, No. 1	per doz. 1 00
carton	\$3 00	Gem, flat, No. 3	per doz. 1 00
REGISTERS AND BORDERS		VENTILATORS	
Baseboard, Floor and Wall.		Standard	30 to 40%
Cast Iron	20%		
Steel and Semi-Steel	33¼%		
Baseboard, 1 piece	33¼-20%		
Baseboard, 3 piece	33¼%		
Wall	33¼%		
Adjustable Ceiling Ventilators			
.....	33¼%		
Register Faces—Cast and Steel		WIRE	
Japanned, Bronzed and		Black annealed wire, No. 9,	
Plated, 4x6 to 14x14	33¼%	per 100 lbs.	\$3 30
Large Register Faces—Cast.		Galvanized barb wire, per	
14x14 to 35x42	50%	100 lbs.	\$ 30
Large Register Faces—Steel.		Cattle Wire—galvanized catch	
14x14 to 35x42	60%	weight spool, per 100 lbs.	\$ 30
Ventilating Register		Galvanized Plain Wire, No.	
Per gross	9 00	9, per 100 lbs.	\$ 25
Small, per pair	25		
Large, per pair	50		

CHICAGO METAL MFG. COMPANY

Manufacturers of Sheet Metal Products

CONDUCTOR PIPE EAVES TROUGH



Conductor Hooks — Gutter End Pieces,
Caps and Outlets. Eaves Trough Hangers.
FURNACE PIPE, STOVE PIPE & ELBOWS



ELBOWS AND SHOES
EAVES TROUGH MITRES

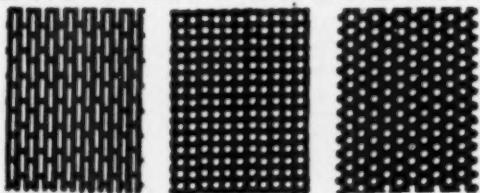
FLAT AND CORRUGATED SHEETS
LOCK-SEAM PIPE

BLOW PIPE ELBOWS STEEL FLANGES

Telephones: LAFayette 5754-5755

3718 South Rockwell St., CHICAGO, ILL.

PERFORATED METALS



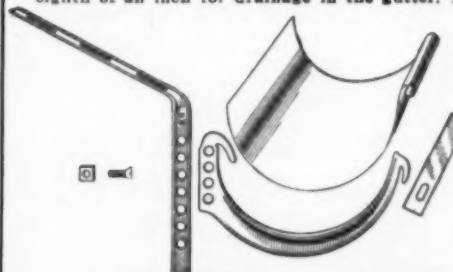
All Sizes and Shapes of Holes
In Steel, Zinc, Brass, Copper, Tinplate, etc.
For All Screening, Ventilating and Draining
EVERYTHING IN PERFORATING METAL

THE HARRINGTON & KING PERFORATING CO.

5649 FILLMORE ST.—CHICAGO, ILL. U. S. A.
NEW YORK OFFICE: 114 LIBERTY ST.

ROOF GUTTER SUPPORTS

This illustration shows, unassembled, one of the many styles of eaves trough hangers made by us which may be adjusted every eighth of an inch for drainage in the gutter. These hangers are



widely used throughout the United States. Write for catalog No. 27 which also illustrates and describes conductor hooks and fasteners.

Free Samples Gladly Furnished.

L. D. BERGER COMPANY

57 N. 2nd St., Philadelphia, Pa.

THIS MEANS SERVICE

B.B. LINE OF SHEET METAL
SUPPLIES

CARRIED IN STOCK BY YOUR NEAREST JOBBER
INSURING PROMPT SHIPMENT OF QUALITY
MATERIAL.

EVERY ITEM OF THE B. B. LINE IN A CLASS BY
ITSELF. LOOK FOR THE B. B.

B. B. Conductor Hooks and Gutter Hangers, "SHUR-LOCK" Conductor Pipe, "E-Z Fit" Eaves Trough, "Quaker City" Mitres, Ends, Caps and Outlets. Other items in our No. 10 Catalog.

BERGER BROS. CO.

229 TO 237 ARCH ST.

PHILADELPHIA

CHICAGO STEEL SLITTING SHEAR

LIGHT—POWERFUL
DURABLE



Capacity 10 gauge sheets

Any Length or Width

Flat Bars 3/16x2"

Weight 22 pounds

Price \$12.50 Net

F. O. B. Chicago

Made of pressed steel and equipped with hold-down. Blades of highest grade crucible steel. Most indispensable high grade shears made. Equal to other shears selling at over twice the price. **ORDER YOURS TODAY.**

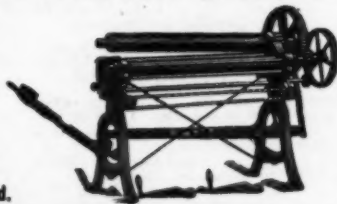
DREIS & KRUMP MFG. CO., 7404 Loomis St., Chicago

50-INCH FORMING ROLL

This Forming Roll is built in all standard sizes, with our Patented Opening Device by means of which it is opened and closed in a few seconds.

We build a complete line of Shears and punches, all sizes, for hand or belt power.

Write for Catalog "R"
BERTSCH & CO., Cambridge City, Ind.



RYERSON SHEETS

IMMEDIATE SHIPMENT FROM STOCK

More than twenty kinds of Prime quality sheets are carried in stock. There is a special sheet for every purpose. Also Bars, Angles, Rivets, Bolts, Tools and Metal-Working Machinery. Write for Journal and Stock List.

JOSEPH T. RYERSON & SON INC.

Chicago Milwaukee Jersey City Boston Detroit St. Louis Cincinnati Cleveland Buffalo

The NEW IMPROVED "STANDARD"

Rotable Ventilator

Now made of Armco Iron

This favorite cone-shaped ventilator is now improved in several important points.

The weight of the ventilator body is now carried on a concave thrust bearing nested in the apex of the conical body. This bearing turns upon the pivot point of the stationary center spindle.

The bronze Guide Bushings are now made of non-corrosive bronze which minimizes friction and any tendency to screech when body is rotating.

There are other new features. Write today for new catalog and price list.



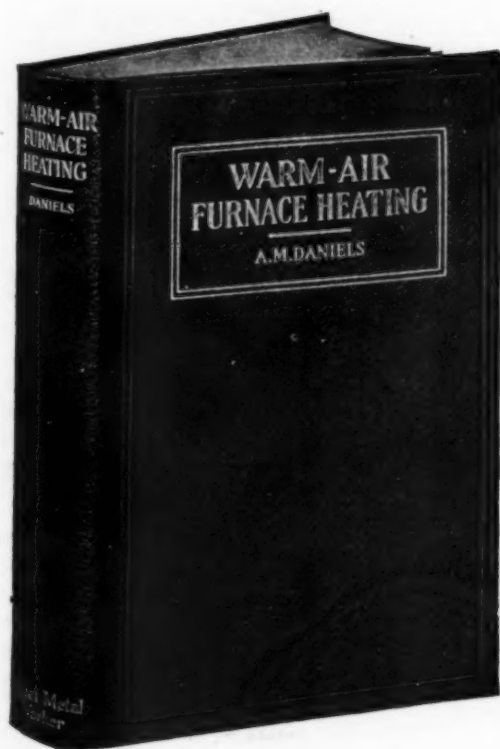
Patents pending

STANDARD VENTILATOR CO., Lewisburg, Pa.

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Lamson & Sessions Co., Cleveland, Ohio
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- Brakes—Bending.**
Dreis & Krump Mfg. Co., Chicago, Ill.
Ryerson & Son, Inc., Jos. T., Chicago, Ill.
- Brakes—Cornice.**
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- Drive Screws—Hardened Metallic.**
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Eaves Trough.
Barnes Metal Products Co., Chicago, Ill.
- Berger Bros. Co.,** Philadelphia, Pa.
Berger Co., L. D., Philadelphia, Pa.
Burton Co., The W. J., Detroit, Mich.
Lupton's Sons Co., David, Philadelphia, Pa.
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New Jersey Zinc Sales Co., The, New York, N. Y.
Wheeling Corrugating Co., Wheeling, W. Va.
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- Flanges.**
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- Fittings—Steel Pipe.**
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Williamson Heater Co., Cincinnati, Ohio
- Furnace Fuse.**
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- Furnace Regulators.**
National Regulator Co., Chicago, Ill.
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Milwaukee Corrugating Co., Milwaukee, Wis.
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Mueller Furnace Co., L. J., Milwaukee, Wis.
- Furnaces—Warm Air.**
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Beckwith Co., The, Dowagiac, Mich.
Brillion Furnace Co., Brillion, Wis.
Colburn Heater Co., Chicago, Ill.
Floral City Heater Co., Monroe, Mich.
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Midland Furnace Co., Columbus, Ohio
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Rudy Furnace Co., Dowagiac, Mich.
Rybolt Heater Co., Ashland, Ohio
Standard Furnace & Supply Co., Omaha, Neb.
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Harrington & King Perforating Co., Chicago, Ill.
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National Regulator Co., Chicago, Ill.
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For Sale—One No. 10 Fuller rotary shear for slitting and cutting in and outside circles from 5" to 50" capacity, 10 gauge, in good working condition. Will sell at bargain. Address **D-488, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.**

Wanted—Good sheet metal, plumber and heating man wants to rent good shop or work on commission basis. Good references. Address **C-488, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.**

80 acres of good land to exchange or trade for hardware, tinshop and stock, or furnace stock. Address **Box 548, Pierre, S. D.** J-486

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Situation Wanted—Man with twenty years' experience in all the branches of Sheet Metal work, including kitchen equipment, furnace work and specializing in ventilation work, desires position. Strictly sober, honest and reliable. Services available November 20th. Address **A-486 AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.**

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Situation wanted by an all around handy man. Plumbing, steam fitting, tin work, house electric wiring, guttering. Finest work and can also help in hardware store; 14 years' experience. Address **H-486, AMERICAN ARTISAN, 620 South Michigan avenue, Chicago, Illinois.**

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Wanted—Experienced furnace and stove salesman, familiar with the Standard Code, desires connection with reputable concern as sales representative. Can give convincing proof of my ability to produce. Address **E-488, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.**

Live wire, capable, reliable furnace salesman desires to make change. Would consider proposition from progressive furnace concern. Eight years' road experience in Illinois and Indiana. Address **G-486, AMERICAN ARTISAN, 620 South Michigan avenue, Chicago, Illinois.**

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Wanted—Competent Roofing and Sheet Metal Foreman. Must be capable of handling big work, and get results with men. Only those who are thoroughly familiar with slate, tile and composition roofing will be considered. Steady job for the right man. Open shop. Address **Z-486, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.**

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Experienced Furnace Salesman for one of our Ohio territories. **May-Fiebeger Co., Newark, Ohio.** P486

WANTED

Furnace Salesman for Iowa; old established line; only man with successful selling record need apply. Must be able to figure standard Code installations. Address **B-488, American Artisan, 620 So. Michigan Ave., Chicago, Illinois.**

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Experienced furnace salesman, well acquainted with dealers and jobbers in the Mid-West, desires connection with a reputable concern, either as sales representative or Chicago branch manager. Can give convincing proofs of my ability to produce. Address **M-486, American Artisan, 620 So. Michigan Ave., Chicago, Ill.**

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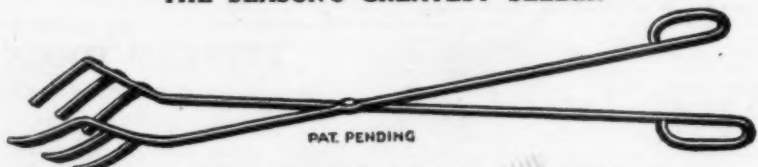
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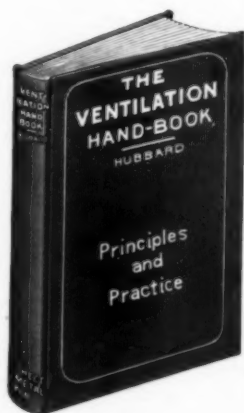
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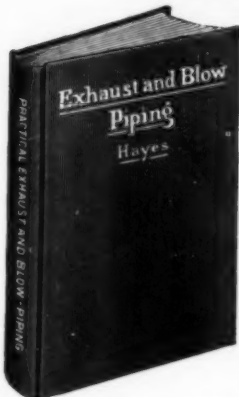
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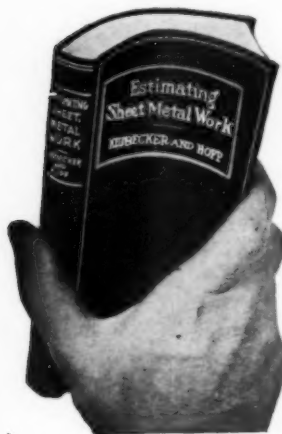


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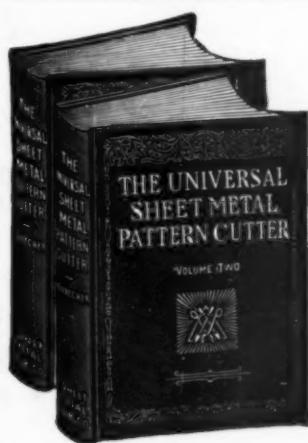


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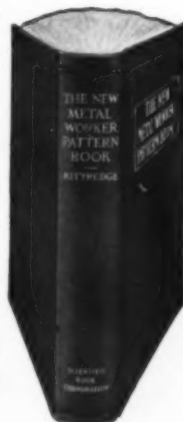
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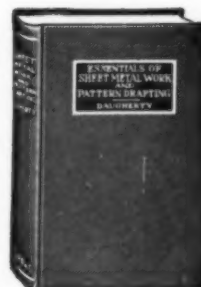


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